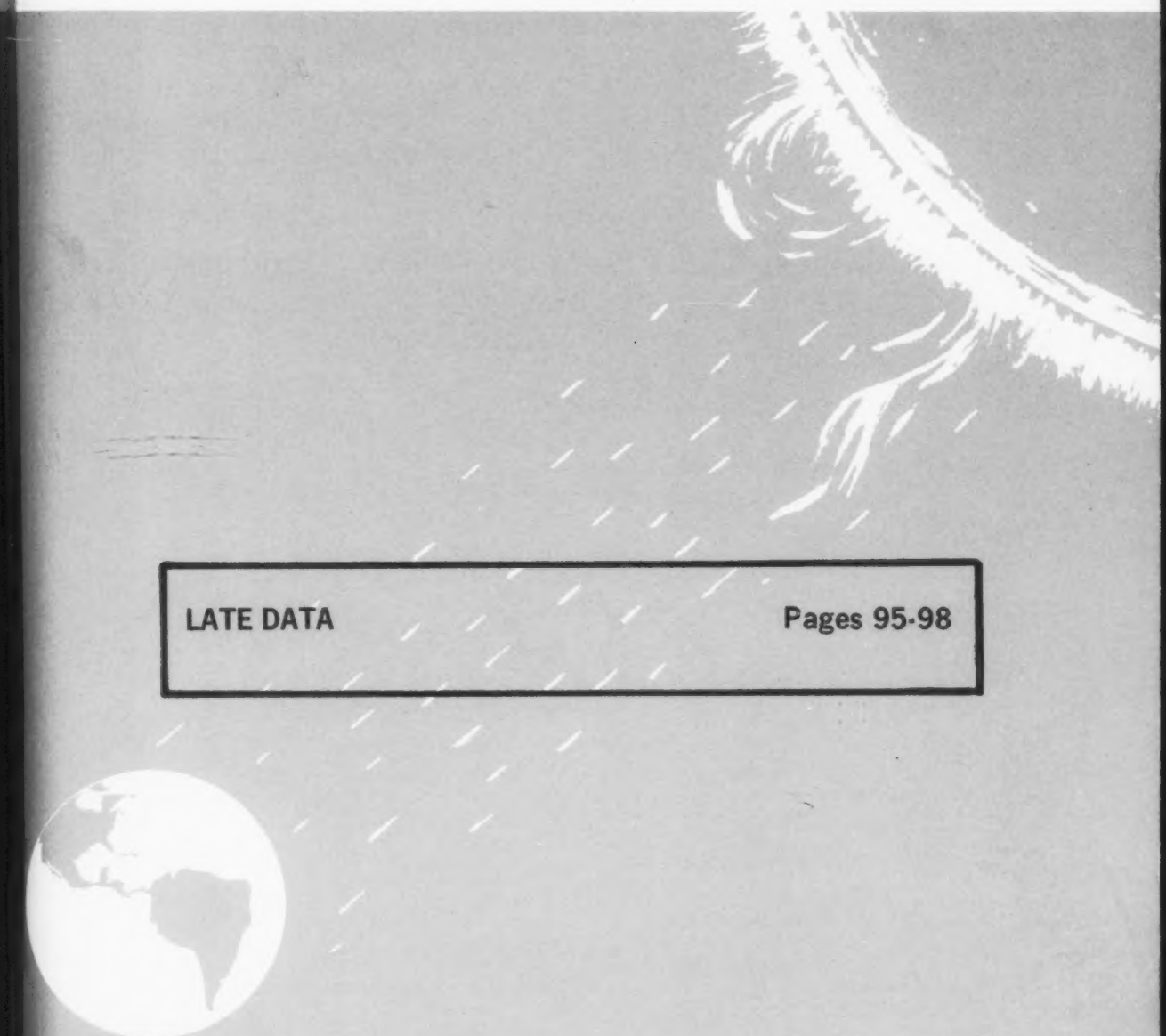
APRIL 1983 NUMBER 464 -- Part I

NOAA STACKS
JUN 2 0 198

Solar-Geophysical Data prompt reports

Data for March 1983, February 1983 & Late Data
Explanation of Data Reports Issued as Number 462 (Supplement) February 1983



LATE DATA **Pages 95-98**

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL GEOPHYSICAL DATA CENTER / BOULDER, COLORADO

U.S. DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
John V. Byrne, Administrator

NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
John H. McElroy, Assistant Administrator

Solar - Geophysical Data

Part I (Prompt Reports)

NO. 464 APRIL 1983

DATA FOR
MARCH 1983
FEBRUARY 1983

Michael A. Chinnery, Director
NATIONAL GEOPHYSICAL DATA CENTER
BOULDER, COLORADO

For sale through the National Geophysical Data Center, NOAA/NESDIS, E/GC2, 325 Broadway, Boulder, Colorado 80303. Subscription Price: $64.00 annually for both Part I (Prompt Reports) and Part II (Comprehensive Reports) or $32.00 annually for either part. Annual supplement containing explanation is included. For foreign mailing add $42.00 for both parts or $21.00 for either part. Make checks and money orders payable to: Department of Commerce, NOAA/NGDC.

For obtaining bulletins on a data exchange basis, send request to: World Data Center A for Solar-Terrestrial Physics, NOAA/NESDIS/NGDC, E/GC2, 325 Broadway, Boulder, Colorado 80303.

BACK ISSUES OF "SOLAR GEOPHYSICAL DATA"

Reel#	Coverage	Medium	Reel#	Coverage	Medium	Reel#	Coverage	Medium
1	Jan 56 - Dec 56	Microfilm	9	Jan 64 - Dec 64	Microfilm	17	Jul 69 - Dec 69	Microfilm
2	Jan 57 - Dec 57	Microfilm	10	Jan 65 - Dec 65	Microfilm	18	Jan 70 - Jun 70	Microfilm
3	Jan 58 - Dec 58	Microfilm	11	Jan 66 - Sep 66	Microfilm	19	Jul 70 - Dec 70	Microfilm
4	Jan 59 - Dec 59	Microfilm	12	Oct 66 - Dec 66	Microfilm	20	Jan 71 - Jun 71	Microfilm
5	Jan 60 - Dec 60	Microfilm	13	Jan 67 - Dec 67	Microfilm	21	Jul 71 - Dec 71	Microfilm
6	Jan 61 - Dec 61	Microfilm	14	Jan 68 - Jun 68	Microfilm	22	Jan 72 - Jun 72	Microfilm
7	Jan 62 - Dec 62	Microfilm	15	Jul 68 - Dec 68	Microfilm	23	Jul 72 - Dec 72	Microfilm
8	Jan 63 - Dec 63	Microfilm	16	Jan 69 - Jun 69	Microfilm		1973 - 1981	Microfiche

Microfilm are available at $20.00 per reel; microfiche at $40.00 per year; $800.00 for above set.
Back issues in booklet form are available as long as stocks exist at $3.00 for either part.
Note: $4.00 handling charge per order.

To standardize referencing these reports in the open literature, the following format is recommended: Solar-Geophysical Data, 462 Part I (or Part II), pages, February 1983, U.S. Department of Commerce (Boulder, Colorado, USA 80303).

SOLAR-GEOPHYSICAL DATA

No. 464

Issued in two parts

Helen E. Coffey, Editor

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

CONTENTS

Part I (Prompt Reports)

	PAGE
Index for 1982-1983	2
Data for March 1983	3-32
Data for February 1983	33-93
Late Data	95-98
Hourly Equatorial Dst Values January 1983	
Sudden Commencements January 1983	

Part II (Comprehensive Reports)

Index for 1982-1983	2
Data for October 1982	3-36
Miscellaneous Data: None	

DETAILED COVERAGE FOR 1982-83 PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

CODE	KIND OF OBSERVATION	1982 MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1983 JAN	FEB	MAR
A.	SOLAR AND INTERPLANETARY PHENOMENA													
A.1	Sunspot Drawings	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	
A.2aa	International Provisional Relative Sunspot Numbers Ri	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9
A.2c	American Relative Sunspot Numbers Ra	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9
A.3a	Mt. Wilson Magnetograms	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	453A102	454A104	455A126	457A166	457A112	458A110	459A105	460A 83	461A 88	462A 75	463A 71	464A 66	
A.3c	Kitt Peak Magnetograms	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	
A.3d	Mean Solar Magnetic Field (Stanford)	452A 42	453A 32	454A 32	455A 56	456A 48	457A 42	458A 38	459A 36	460A 44	461A 52	462A 34	463A 30	464A 32
A.3e	Stanford Magnetograms	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	
A.4	H-alpha Filtergrams	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	
A.5	Calcium Plage Drawings - Mt. Wilson or Big Bear	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48						
A.5a	Calcium Plage (Mt. Wilson or Big Bear) and Sunspot Regions	453A102	454A104	455A126	457A166	457A112	458A110							
A.5b	Mt. Wilson or Big Bear Daily Calcium Plage Indices	453A113	454A117	455A138	457A176	457A122	458A119							
A.6	H-alpha Synoptic Charts	453A 36	454A 36	456A 52	456A 53	457A 46	458A 42	459A 40	460A 47	461A 54	462A 36	463A 45	464A 34	
A.6b	Synoptic Chart and Active Regions (Paris)	460B154	460B155	462B 92	463B 94									
A.6c	Stanford Solar Magnetic Field Synoptic Charts	453A 37	454A 38	455A 61	456A 55	458A 43	458A 44	460A 48	460A 49	461A 55	462A 38	463A 37	464A 35	
A.6d	Kitt Peak Solar Magnetic Field Synoptic Charts	453A 38	454A 40	455A 62	456A 56	457A 48	458A 45	459A 42	460A 50	461A 56	462A 40	463A 38	464A 36	
A.6e	Mass Ejections from the Sun	457B 73	458B 40	459B 37	460B113	461B 94	462B 52	463B 43	464B 36					
A.7g	Helium Synoptic Maps (KPNO)	45A144	454A 42	455A 63	456A 56	457A 49	458A 47	459A 43	460A 51	461A 57	462A 42	463A 39	464A 37	
A.7h	Coronal Line Emission (Sac Peak)	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9
A.8ac	2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9
A.8g	Daily Values of Adjusted Solar Flux (AFGL)	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9
A.10a	169 MHz - Interferometric Observations (Nancay)	452A 28	455A162	454A 21	455A 30			458A 25	459A 26	460A 28	461A 32	462A 24	463A 20	464A 20
A.10c	21 cm East-West Solar Scans (Fleurs)	452A 31	---	---	455A 33	456A 30	457A 29	458A 28	459A 28	460A 31	461A 35	462A 27	463A 23	464A 23
A.10d	43 cm East-West Solar Scans (Fleurs)	452A 32	---	---	---	456A 30	457A 30	458A 29	459A 29	460A 32	461A 36	462A 28	463A 24	464A 24
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	452A 30	453A 25	454A 23	455A 32	456A 29	457A 28	458A 27	459A 27	460A 30	461A 34	462A 26	463A 22	464A 22
A.10f	3 cm East-West Solar Scans (Toyokawa)	452A 29	453A 24	454A 22	455A 31	456A 28	457A 27	458A 26		460A 29	461A 33	462A 25	463A 21	464A 21
A.11g	Solar X-ray (SMS/GOES) (graphs)	457B 67	458B 35	459B 31	461B 98	461B 88	462B 46	463B 38	464B 31					
A.12a	Energetic Solar Particles (IMP H & J) 1980-81	---	---	---	---	---	---	---	---	---	---	---	---	---
A.13d	Solar Wind from IPS Measurements													
A.13e	Solar Plasma (IMP H & J)	457B 66	458B 34											
A.17	Interplanetary Magnetic Field (Pioneer 12)	455A175	455A175	455A142	---	457A129	458A124	459A130	461A136	462A132				
A.17c	Inferred IP Magnetic Field	452A 40	453A 30	454A 30	455A 54	456A 46	457A 40	458A 36	459A 34	460A 42	461A 50	462A 32	463A 28	464A 30
B.	IONOSPHERIC (AND RADIO WAVE PROPAGATION) PHENOMENA													
B.52	Graphs of Transmission Frequency Range	453A144	454A140	455A158	456A156	457A162	458A148	459A156	460A128	461A132	462A128	463A106	464A 92	
B.53	Quality Figures Based on Frequency Ranges	453A143	454A142	455A157	456A158	457A161	458A150	459A158	460A130	461A131	462A130	463A106	464A 91	
C.	FLARE-ASSOCIATED EVENTS													
C.1a	Optical Observations Flares	452A 16	453A 16	454A 14	455A 16	456A 14	457A 14	458A 14	459A 14	460A 16	461A 16	462A 16	463A 14	464A 14
C.1ba	Optical Observations Flares (Standardized Data) 1980			457B 76	459B 39	460B116	462B 56	463B 46						
C.1d	Flare Patrol Observations	452A 27	453A 23	454A 20	455A 29	456A 27	457A 26	458A 24	459A 25	460A 27	461A 31	462A 23	463A 19	464A 19
C.1d	Flare Patrol Observations 1980			457B115	459B 87	460B151	462B 89	463B 91						
C.1e	Flare Indices (by day) 1980			457B114	459B 86	460B150	462B 88	463B 90						
C.3	Solar Radio Waves - Outstanding Occurrences*	457B 4	458B 4	459B 4	460B 4	460B 4	462B 4	463B 4	464B 4					
	Solar Radio Waves - Fixed Frequencies - Selected	452A 33	453A 26	454A 24	455A 34	456A 31	457A 31	458A 30	459A 30	460A 33	461A 37	462A 29	463A 25	464A 25
C.4a	Solar Radio Spectral Obs. (Fort Davis)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109		---	---	
C.4d	Solar Radio Spectral Obs. (Culgoora)	455A163	455A170	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	
C.4e	Solar Radio Spectral Obs. (Weissenau)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	
C.4h	Solar Radio Spectral Obs. (Dwingeloo)													
C.4i	Solar Radio Spectral Obs. (Bleien)	454A145								461A109	462A 98	463A 92	464A 78	
C.4k	Solar Radio Spectral Obs. (Learmonth)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	
C.4l	Solar Radio Spectral Obs. (Palehua)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	
C.5a	Solar X-ray (SMS/GOES) (graphs)	457B 67	458B 35	459B 31	461B 98	461B 88	462B 46	463B 38	464B 31					
C.6	Sudden Ionospheric Disturbances	453A114	454A118	455A139	456A118	457A123	458A120	459A126	460A102	461A103	462A 92	463A 89	464A 75	
D.	GEOMAGNETIC AND MAGNETOSPHERIC PHENOMENA													
D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, ae, Cp	453A136	454A134	455A153	456A149	457A154	459A162	459A150	461A136	461A126	462A121	463A102	464A 87	
D.1ba	27-day Chart of Kp Indices	453A138	454A136	455A155	456A151	457A156	458A144	459A152	460A125	461A128	462A123	463A104	464A 89	
D.1c	27-day Chart of C9	462A124	462A124	462A124	462A124	462A124	462A124	462A124	462A124	462A124	462A124			
D.1d	Principal Magnetic Storms	453A141	454A139	455A156	456A154	457A159	458A147	459A153	460A126	461A129	462A125	463A105	464A 90	
D.1f	Sudden Commencement and Solar Flare Effects	453A142	456A160		456A155	457A160	459A164	459A155	460A127	461A130	462A127	464A 98		
D.1g	Equatorial Indices Dst	453A140	454A138	456A160	456A153	457A158	458A146	460A135	462A139	462A140	463A111	464A 97		
D.1h	Geomagnetic Substorm Log (Boulder)	452A 44	453A 34	454A 34	455A 58	456A 49	457A 43	458A 40	459A 38	460A 41	461A 49	462A 31	463A 31	464A 29
F.	COSMIC RAYS													
F.1a	Cosmic Ray Neutron Counts (Deep River)	453A135	455A177	455A152	456A148	457A153	459A160	459A149	460A119	462A134	462A116	463A101	464A 83	
F.1b	Cosmic Ray Neutron Counts (Climax)	454A150	454A131	457A176	457A178	462A133	462A133	462A133	462A134	462A134	462A116			
F.1e	Cosmic Ray Neutron Counts (Alert)	453A135	455A177	455A152	456A148	457A153	459A160	459A149	460A119	462A134	462A116	463A101	464A 83	
F.1h	Cosmic Ray Neutron Counts (Thule)	453A135	454A131	455A152	456A148	457A153	458A143	459A149	460A119	461A123	462A116	463A101	464A 83	
F.1l	Cosmic Ray Neutron Counts (Kiel)	453A135	454A131	457A178	457A178	457A153	458A143	459A149	460A119	462A134	462A116	463A101	464A 83	
F.1j	Cosmic Ray Neutron Counts (Tokyo)	453A135	454A131	457A178	457A178	457A153	458A143	459A149	460A119	461A123	462A116	463A101	464A 83	
F.1l	Cosmic Ray Neutron Counts (Huancayo)	454A150	457A176	457A178	462A133	462A133	462A133	462A133	462A134	462A134				
H.	MISCELLANEOUS													
H.60	IUWDS Alert Decisions	452A 5	453A 5	454A 4	455A 5	456A 4	457A 4	458A 4	459A 4	460A 5	461A 4	462A 5	463A 4	464A 4

Notes:

"453A 40" listed under 1982 Mar means that the sunspot drawings for Mar 1982 were contained in Solar-Geophysical Data Number 453 - Part I, beginning on page 40.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

*Solar radio noise bursts observed at Athens, Learmonth, Manila, Palehua and Sagamore Hill during Aug 1979 through Oct 1980 appear in Solar-Geophysical Data, Number 461, Part II, pages 103-2139.

SGD 464 Part I (Prompt)

MARCH 1983 DATA

Contents

	Page
Alert Periods	
IUWDS Alert Periods (Advance and Worldwide)	4-7
Daily Solar Indices	
Relative Sunspot Numbers, R_z or Ri, and Daily Solar Flux at 2800 MHz (12 Month Tables)	8
Daily Solar Indices (Sunspot Numbers and Solar Fluxes)	9
Observed and Predicted Solar Activity Indices	10
Smoothed Observed and Predicted Sunspot Numbers	11
Graph of Observed and Predicted Sunspot Numbers	12
Graph and Table of Unsmoothed Monthly Mean Sunspot Numbers 1944 to present	13
Solar Flares	
H-alpha Solar Flares	14-18
Intervals of No Flare Patrol Observation	19
Solar Radio Emission	
169 MHz Solar Interferometric Chart - Nancay	20
3 cm East-West Solar Scans - Toyokawa	21
10.7 cm East-West Solar Scans - ARO, Ottawa	22
21 cm East-West Solar Scans - Fleurs	23
43 cm East-West Solar Scans - Fleurs	24
Selected Fixed Frequency Events	25-27
Selected Solar Noise Bursts	28
Solar Wind Measurements	
Interplanetary Scintillations (Data not available -- brush fire destroyed antenna -- expected date to resume operation is late 1983.)	
Geomagnetic	
Boulder Geomagnetic Substorm Log	29
Inferred Interplanetary Magnetic Field Polarities	30
Mean Solar Magnetic Field	
Stanford Mean Solar Magnetic Field (Chart)	31
Stanford Mean Solar Magnetic Field (Table)	32
Spacecraft Observations	
Pioneer XII (Pioneer Venus) Solar Wind (Data no longer available due to NGDC budget reductions.)	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES MARCH 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
060	01	28	148	140	007	S10W81	1	0	0		01	S10W81	Q	SOLQUIET
						S08W66	0	0	0			S08W66	Q	MAGQUIET
						S08W51	0	0	0			S08W51	Q	
						N12W45	4	0	0			N12W45	Q	
						S15W01	0	0	0			S15W01	Q	
						N15E02	0	0	0			N15E02	Q	
						S15E09	6	0	0			S15E09	Q	
						S19E23	0	0	0			S19E23	Q	
						S16E56	4	0	0			S16E56	Q	
						S20E61	3	0	0			S20E61	Q	
061	02	01	151	148	015	S11W97	1	0	0		02	S11W97	Q	SOLQUIET
						S08W80	0	0	0			S08W80	Q	MAGQUIET
						S09W65	1	0	0			S09W65	Q	
						N12W61	0	0	0			N12W61	Q	
						S12W15	0	0	0			S12W15	Q	
						N16W12	0	0	0			N16W12	Q	
						S14W04	3	0	0			S14W04	Q	
						S18E09	0	0	0			S18E09	Q	
						S15E43	5	0	0			S15E43	Q	
						S19E51	8	0	0			S19E51	E	
062	03	02	154	141	051	S08W91	0	0	0	PRESTO STRONG MAGSTORM IN	03	S08W91	Q	SOLQUIET
						S09W78	0	0	0	PROGRESS 02/0745Z		S09W78	Q	MAGALERT
						N13W73	0	0	0			N13W73	Q	MINOR 03
						N17W25	0	0	0			N17W25	Q	
						S16W24	0	0	0			S16W24	Q	
						S15W16	0	0	0			S15W16	Q	
						S18W03	0	0	0			S18W03	Q	
						S09E19	0	0	0			S09E19	Q	
						S15E30	0	0	0			S15E30	E	
						S19E39	9	0	0			S19E39	E	
063	04	03	136	143	032	S12W91	0	0	0	PRESTO MAGSTORM 02/00XXZ	04	S12W91	Q	SOLQUIET
						S14W83	0	0	0			S14W83	Q	MAGALERT
						N17W39	0	0	0			N17W39	Q	05/XX
						S16W26	0	0	0			S16W26	Q	
						S18W16	0	0	0			S18W16	Q	
						S09E06	6	0	0			S09E06	Q	
						S15E16	0	0	0			S15E16	Q	
						S18E25	0	0	0			S18E25	E	
						S15E35	0	0	0			S15E35	Q	
064	05	04	182	146	016	N16W52	0	0	0		05	N16W52	Q	SOLQUIET
						S13W50	0	0	0			S13W50	Q	MAGNIL
						S19W38	2	0	0			S19W38	Q	
						S19W30	0	0	0			S19W30	Q	
						S07W16	0	0	0			S07W16	Q	
						S09W08	4	0	0			S09W08	Q	
						S15E03	1	0	0			S15E03	Q	
						S15E12	0	0	0			S15E12	Q	
						S18E12	0	0	0			S18E12	Q	
						S12E21	0	0	0			S12E21	Q	
065	06	05	152	149	027	N17W65	0	0	0		06	N17W65	Q	SOLQUIET
						S13W65	1	0	0			S13W65	Q	MAGQUIET
						S18W42	0	0	0			S18W42	Q	
						S06W31	0	0	0			S06W31	Q	
						S08W21	0	0	0			S08W21	Q	
						S14W11	3	0	0			S14W11	Q	
						S13W06	1	0	0			S13W06	Q	
						S19W02	0	0	0			S19W02	Q	
						S11E08	1	0	0			S11E08	Q	
066	07	06	118	141	012	S13W81	3	0	0		07	S13W81	Q	SOLQUIET
						N17W78	0	0	0			N17W78	Q	MAGQUIET
						S18W55	0	0	0			S18W55	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES MARCH 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S08W34	1	0	0			S08W34	Q	
						S15W24	1	0	0			S15W24	Q	
						S13W19	0	0	0			S13W19	Q	
						S18W15	2	0	0			S18W15	Q	
						S12W05	1	0	0			S12W05	Q	
067	08	07	099	134	008	S18W68	0	0	0		08	S18W68	Q	SOLQUIET
						S08W48	1	0	0			S08W48	Q	MAGQUIET
						S15W36	0	0	0			S15W36	Q	
						S11W31	0	0	0			S11W31	Q	
						S17W28	0	0	0			S17W28	Q	
						S07W18	0	0	0			S07W18	Q	
068	09	08	085	130	010	S18W81	1	0	0		09	S18W81	Q	SOLQUIET
						S09W61	6	0	0			S09W61	Q	MAGQUIET
						S15W51	5	0	0			S15W51	Q	
						S19W43	11	0	0			S19W43	E	
						S02W13	2	0	0			S02W13	Q	
069	10	09	119	124	007	S19W92	0	0	0		10	S19W92	Q	SOLQUIET
						S09W76	1	0	0			S09W76	Q	MAGQUIET
						N25W65	0	0	0			N25W65	Q	
						S15W64	0	0	0			S15W64	Q	
						S20W55	7	0	0			S20W55	Q	
						S02W26	5	0	0			S02W26	Q	
						N12E29	0	0	0			N12E29	Q	
070	11	10	087	117	007	S09W90	5	0	0		11	S09W90	Q	SOLQUIET
						S15W78	0	0	0			S15W78	Q	MAGQUIET
						S20W67	5	1	0			S20W67	Q	
						N07W41	0	0	0			N07W41	Q	
						S02W40	3	0	0			S02W40	Q	
071	12	11	078	104	018	S15W91	0	0	0		12	S15W91	Q	SOLQUIET
						N06W55	0	0	0			N06W55	Q	MAGALERT
						S02W54	2	0	0			S02W54	Q	MINOR 11/XX
						S08E02	0	0	0			S08E02	Q	RECURRENCE
						S20E80	0	0	0			S20E80	Q	
072	13	12	055	104	028	S21W92	0	0	0	PRESTO KAKIOKA 13/0100Z	13	S21W92	Q	SOLQUIET
						N06W69	0	0	0	MAGSTORM 12/10XXZ		N06W69	Q	MAGALERT
						S02W68	0	0	0			S02W68	Q	MINOR 13/15
						S10W11	0	0	0			S10W11	Q	RECURRENCE
073	14	13	011	097	029	S02W80	0	0	0		14	S02W80	Q	SOLQUIET
														MAGNIL
074	15	14	046	097	023	S10W38	0	0	0		15	S10W38	Q	SOLQUIET
						S13E53	4	0	0			S13E53	E	MAGQUIET
						S07E73	8	0	0			S07E73	E	
075	16	15	068	103	014	N19W14	1	0	0		16	N19W14	Q	SOLQUIET
						S12E75	0	0	0			S12E75	Q	MAGQUIET
						S07E64	2	0	0			S07E64	E	
						S13E38	1	0	0			S13E38	E	
076	17	16	090	109	012	N20W28	0	0	0		17	N20W28	Q	SOLQUIET
						S13E26	5	0	0			S13E26	E	MAGQUIET
						S06E50	9	0	0			S06E50	E	
						S11E61	0	0	0			S11E61	Q	
077	18	17	096	116	013	N19W43	0	0	0	PRESTO TENFLARE 370 FLUX UNITS	18	N19W43	Q	SOLALERT
						S13E13	3	0	0	17/2012Z DURATION 8 MINUTES		S13E13	Q	19/21
						S06E37	11	4	0			S06E37	Q	MAGQUIET
						S11E48	0	0	0			S11E48	Q	
078	19	18	120	119	016	N15W57	0	0	0		19	N15W57	Q	SOLALERT
						S13E01	6	0	0			S13E01	E	19/21
						N11E02	0	0	0			N11E02	Q	MAGALERT

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES MARCH 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S07E24	6	2	0			S07E24	A	19/20
						S11E35	1	0	0			S11E35	Q	
						S13E75	0	0	0			S13E75	Q	
079	20	19	129	119	023	N15W69	0	0	0		20	N15W69	Q	SOLNIL
						S12W12	5	0	0			S12W12	A	MAGALERT
						N11W11	0	0	0			N11W11	Q	MINOR 20
						S07E11	1	0	0			S07E11	A	RECURRENCE
						S11E23	0	0	0			S11E23	Q	
						S13E65	0	0	0			S13E65	Q	
080	21	20	122	122	021	S13W26	7	0	0		21	S13W26	A	SOLQUIET
						S07W03	1	0	0			S07W03	E	MAGNIL
						S11E09	0	0	0			S11E09	Q	
						S14E19	0	0	0			S14E19	Q	
						S13E50	0	0	0			S13E50	Q	
081	22	21	128	117	012	S12W38	4	0	0		22	S12W38	A	SOLQUIET
						S07W16	0	0	0			S07W16	E	MAGQUIET
						S11W02	0	0	0			S11W02	Q	
						S13E07	0	0	0			S13E07	Q	
						S22E08	0	0	0			S22E08	Q	
						S13E37	0	0	0			S13E37	Q	
082	23	22	105	118	010	S12W52	2	0	0		23	S12W52	E	SOLQUIET
						S07W31	0	0	0			S07W31	Q	MAGQUIET
						S11W16	2	0	0			S11W16	Q	
						S12W10	0	0	0			S12W10	Q	
						S24W03	0	0	0			S24W03	Q	
						S12E21	0	0	0			S12E21	Q	
083	24	23	090	117	010	S11W67	3	0	0		24	S11W67	E	SOLQUIET
						S07W44	0	0	0			S07W44	Q	MAGQUIET
						S11W31	0	0	0			S11W31	Q	
						S12W24	4	0	0			S12W24	Q	
						S12E07	0	0	0			S12E07	Q	
084	25	24	105	118	009	S11W82	0	0	0		25	S11W82	Q	SOLQUIET
						S07W58	1	0	0			S07W58	Q	MAGQUIET
						S11W43	0	0	0			S11W43	Q	
						N21W41	0	0	0			N21W41	Q	
						S12W39	1	0	0			S12W39	Q	
						S12W05	1	0	0			S12W05	Q	
						S10E77	0	0	0			S10E77	Q	
085	26	25	108	118	045	S08W71	1	0	0	PRESTO MAGSTORM 25/0544Z	26	S08W71	Q	SOLQUIET
						N20W55	1	0	0			N20W55	Q	MAGALERT
						S12W51	1	0	0			S12W51	Q	26
						S12W18	0	0	0			S12W18	Q	
						S25E08	0	0	0			S25E08	Q	
						S15E23	0	0	0			S15E23	Q	
						S09E67	1	0	0			S09E67	Q	
						S16E85	0	0	0			S16E85	Q	
086	27	26	121	118	015	S07W85	0	0	0		27	S07W85	Q	SOLQUIET
						N21W70	9	0	0			N21W70	Q	MAGNIL
						S12W66	0	0	0			S12W66	Q	
						S48W09	0	0	0			S48W09	Q	
						S25W06	0	0	0			S25W06	Q	
						S15E43	0	0	0			S15E43	Q	
						S10E54	0	0	0			S10E54	Q	
						S17E72	0	0	0			S17E72	Q	
						S21E73	0	0	0			S21E73	Q	
087	28	27	106	110	004	N21W83	0	0	0		28	N21W83	Q	SOLQUIET
						S12W79	0	0	0			S12W79	Q	MAGQUIET
						S25W20	0	0	0			S25W20	Q	
						S11W05	0	0	0			S11W05	Q	
						S14E30	1	0	0			S14E30	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES MARCH 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S10E41	0	0	0			S10E41	Q	
						S15E58	0	0	0			S15E58	Q	
						S21E63	0	0	0			S21E63	Q	
088	29	28	079	105	023	S25W35	0	0	0		29	S25W35	Q	SOLQUIET
						S14E16	3	0	0			S14E16	Q	MAGALERT
						S05E27	0	0	0			S05E27	Q	29/30
						S10E27	0	0	0			S10E27	Q	
						S16E45	0	0	0			S16E45	Q	
						S21E49	0	0	0			S21E49	Q	
089	30	29	076	099	029	S14W22	0	0	0		30	S14W22	Q	SOLQUIET
						S13E03	2	0	0			S13E03	Q	MAGALERT
						S06E14	0	0	0			S06E14	Q	30/XX
						S10E14	0	0	0			S10E14	Q	
						S17E33	0	0	0			S17E33	Q	
						S22E38	0	0	0			S22E38	Q	
090	31	30	079	101	021	S22W06	0	0	0		31	S22W06	Q	SOLQUIET
						S14W05	0	0	0			S14W05	Q	MAGNIL
						S06E01	0	0	0			S06E01	Q	
						S10E03	0	0	0			S10E03	Q	
						S17E20	2	0	0			S17E20	Q	
						S22E24	0	0	0			S22E24	Q	
091	01	31	087	095	022	S17W19	0	0	0			S17W19	Q	SOLQUIET
						S12W12	0	0	0			S12W12	Q	MAGQUIET
						S07W11	0	0	0			S07W11	Q	
						S17E07	1	0	0			S17E07	Q	
						S22E12	0	0	0			S22E12	Q	
						S13E28	0	0	0			S13E28	Q	

NO=MESSAGE SERIAL NUMBER, DI= DATE OF ISSUE, DO=DATE OF OBSERVATION, WOLF=WOLF NUMBER, 10CM=10CM SOLAR FLUX, A=A INDEX, LOC=LOCATION LAT-LONG, TOT=TOTAL, M=NUMBER OF M FLARES, X= NUMBER OF X FLARES, DA= DATE OF FORECAST, DE=DESCRIPTION, Q=QUIET, E=ERUPTIVE, A=ACTIVE, P=PROTON.

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
MARCH 1983

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

02 MARCH 1983 BOULDER 02/0745Z STRONG MAGSTORM IN PROGRESS
03 MARCH 1983 KAKIOKA 03/0600Z MAGSTORM 02/00XXZ
13 MARCH 1983 KAKIOKA 13/0100Z MAGSTORM 12/10XXZ
17 MARCH 1983 BOULDER 17/2130Z TENFLARE 370 FLUX UNITS 17/2012Z DURATION 8 MINUTES
26 MARCH 1983 KAKIOKA 26/0045Z MAGSTORM 25/0544Z

INTERNATIONAL* (R_I) RELATIVE SUNSPOT NUMBERS

Day	1982 Final Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	68	94	109	145	63	70	50	55	115	132	80	88
02	77	85	93	115	57	83	41	68	124	164	88	125
03	55	88	86	151	46	94	33	68	146	143	75	132
04	63	94	93	137	58	104	42	81	176	120	100	137
05	82	82	108	112	63	111	39	97	160	109	100	137
06	110	71	82	117	64	108	32	128	141	55	76	174
07	109	72	77	130	69	115	33	144	117	54	98	175
08	126	63	68	131	89	127	42	150	115	55	86	184
09	100	39	74	132	47	142	61	161	94	54	102	152
10	83	23	55	138	53	147	110	155	81	88	109	166
11	90	21	49	152	58	138	146	157	86	87	112	171
12	77	18	32	142	75	144	187	138	78	92	83	194
13	94	11	12	133	78	139	219	113	81	98	98	172
14	92	10	24	136	58	137	222	100	104	88	116	160
15	92	26	44	127	52	125	246	100	129	71	116	166
16	89	17	63	122	69	128	163	86	133	65	100	140
17	102	22	74	108	76	136	272	93	127	54	108	118
18	86	32	83	91	89	134	270	105	107	33	117	102
19	93	33	82	87	110	134	234	97	117	56	122	79
20	81	32	82	93	112	139	192	77	104	70	118	63
21	74	39	83	91	98	143	138	79	102	95	131	87
22	73	29	70	109	121	146	99	90	95	100	141	88
23	64	40	63	138	107	116	74	71	97	128	120	96
24	58	44	60	145	110	112	27	79	109	145	96	100
25	75	61	48	149	88	92	25	101	118	142	75	122
26	77	70	70	150	117	94	29	98	138	135	73	116
27	70	88	72	126	130	49	22	115	133	131	71	126
28	89	98	48	90	119	36	19	132	132	103	74	120
29	99		50	85	112	32	23	134	144	101	82	98
30	101		72	79	77	38	38	144	160	96	76	79
31	110		37		82		60	120		73		69
Mean	86	50	66	122	82	110	106	108	119	95	98	127

*International sunspot numbers have replaced the Zurich values since January 1981.
The yearly mean sunspot number equaled 115.9 in 1982.

DAILY SOLAR FLUX AT 2800 MHz (10.7 CM) ADJUSTED TO 1 AU

ALGONQUIN RADIO OBSERVATORY, OTTAWA

Day	Jan 82	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	131.4	162.6	145.4	172.2*	151.7	134.2	106.5	123.4	184.3*	205.2	159.6	167.8
02	131.4	156.5*	138.7	172.0*	147.4	135.1	106.9	138.2*	168.7*	209.4	154.5	166.3
03	136.2	145.5	141.0	169.9	147.7	141.5	109.4	153.5*	171.0*	197.0	147.4	181.6
04	138.2	156.8	143.7	158.2	144.7	158.2*	111.5	167.3	188.1*	182.3	143.4	194.5
05	154.6	154.3*	146.6	159.9*	148.7	156.6*	114.1	180.9	179.4	163.9	136.4	195.9*
06	161.6*	152.3	139.3	165.2	153.0	149.6*	121.3	201.2	172.1	151.9	142.1	210.4
07	163.3	142.2	132.3	164.0*	151.0	158.6*	128.2*	219.6	176.8	140.2	142.3	244.3
08	155.9*	133.3	128.1	162.1*	150.8	167.3	150.3*	217.5*	178.5	136.9	144.8	241.7*
09	150.0	121.9	122.0	167.3*	139.8	177.4	176.6*	212.5	179.2	137.4	147.5	258.6
10	144.2	113.4	115.1	177.1*	130.7	196.0*	203.5*	209.5	165.6	134.8	152.9	273.5*
11	139.3	106.9	103.0	178.7*	132.3	224.2	226.4*	205.0*	158.3	137.3	154.1	259.3*
12	135.7	99.8	99.5*	177.5*	132.3	238.3*	239.7*	195.2*	152.5*	136.4	164.9	251.1
13	135.1	95.5	95.8	170.9	129.8	240.2	252.6*	182.9*	151.3	143.9	161.2	239.0
14	137.2	91.7	95.9	157.9	132.2	240.8	269.2*	176.8	147.4	140.4	159.5	235.6
15	141.0	88.5	100.6*	152.2	132.1	235.8	274.0	173.0	149.0*	134.1	157.0*	221.9
16	140.2	89.7	107.8	148.2	139.0	210.6*	269.4*	161.4	147.3	129.8	163.3	213.2*
17	138.0	91.9	114.5	145.9*	142.2*	206.0*	273.3	165.1	147.0*	130.1	158.0	200.5*
18	134.8	97.2	117.7	147.0	146.8	200.7*	247.2*	166.4*	143.2	132.8	170.2*	186.5
19	127.4	94.6	118.3	145.1	155.9	207.5	234.7	159.2	142.6*	136.7	182.3	176.8*
20	120.5	97.3	120.7	144.2	155.6*	207.1	196.5	144.7	146.9	146.2	189.2	159.2
21	116.1	101.6	118.8*	145.2	165.4*	210.7	173.7*	138.6	145.4	161.4	200.9	149.4
22	113.5	106.2	117.2	156.9*	158.8	197.2*	149.5*	138.8	146.2	168.2	231.1*	150.1*
23	115.4	112.0	116.2	175.2	155.7*	187.3	128.5	141.2	152.6*	177.3	196.1	157.0*
24	114.1	114.3	117.1	181.0	144.8*	168.2	117.8	142.9	165.4*	190.9	172.9	166.8
25	122.7	120.3	114.2*	182.6*	145.7	159.1*	108.2	158.5	170.3	196.8	164.8	170.6
26	132.6	126.2	114.7*	178.3	158.0	142.3	102.1	166.4	187.3	193.5	168.8*	168.7
27	133.6	138.3	109.6	167.3	171.5*	127.6	97.8	180.4	191.4	187.7	158.6	166.2
28	140.6	137.6	104.9	161.0*	171.3*	123.1	96.4	181.4	196.9	181.4	160.3*	157.0
29	148.9		98.9	155.6	170.9*	111.7	97.5	183.4	204.6	170.9	161.4	147.3
30	154.8		100.7	149.8*	142.8	108.5	112.4	174.5	202.4	166.7	164.8	142.5
31	161.9		98.7		136.7		114.4	175.0*		165.1		134.4
Mean	137.7	119.6	117.3	162.9	147.9	177.4	164.8	172.1	167.1	160.9	163.7	93.2

*Adjusted for burst in progress at time of measurement.

MARCH 1983

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers R_I	Sunspot Numbers R_A	Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit: AFGL (15400)	AFGL (8800)	AFGL (4995)	Ottawa (2800)	AFGL (2695)	AFGL (1415)	AFGL (606)	AFGL (410)	AFGL (245)
01	60	13	109	94	148.1	578	290	171	145.4	144	126	93	41	20
02	61	14	93	77	141.1	439	242	151	138.7	142	125	--	--	--
03	62	15	86	81	143.4	---	---	---	141.0	---	---	--	--	--
04	63	16	93	96	146.0	---	---	---	143.7	---	---	--	--	--
05	64	17	108	98	149.0	---	---	---	146.6	---	---	--	--	--
06	65	18	82	73	141.4	---	---	---	139.3	---	---	--	--	--
07	66	19	77	69	134.3	---	---	---	132.3	---	---	--	--	--
08	67	20	68	63	129.9	541	270	151	128.1	125	110	78	32	15
09	68	21	74	61	123.7	518	250	138	122.0	123	103	8	7	11
10	69	22	55	50	116.6	---	---	---	115.1	---	---	--	--	--
11	70	23	49	46	104.4	542	254	131	103.0	98	89	--	--	--
12	71	24	32	22	100.7*	553	256	132	99.5*	96	90	--	--	--
13	72	25	12	10	97.0	551	258	127	95.8	88	82	70	29	11
14	73	26	24	22	97.0	556	255	125	95.9	88	83	70	31	11
15	74	27	44	53	101.7*	554	254	131	100.6*	84	85	73	29	13
16	75	1	63	61	108.9	566	265	138	107.8	102	89	76	29	13
17	76	2	74	74	115.7	592	264	147	114.5	---	96	--	78	--
18	77	3	83	71	118.8	566	261	147	117.7	122	98	74	33	17
19	78	4	82	78	119.3	---	---	---	118.3	---	---	--	--	--
20	79	5	82	81	121.7	565	260	151	120.7	118	103	84	36	33
21	80	6	83	74	119.6*	570	269	147	118.8*	96	102	85	33	56
22	81	7	70	63	118.0	576	264	148	117.2	112	101	84	35	16
23	82	8	63	57	116.9	581	271	144	116.2	98	100	84	39	17
24	83	9	60	54	117.8	579	262	145	117.1	107	99	85	35	14
25	84	10	48	43	114.8*	576	261	145	114.2*	113	104	80	33	18
26	85	11	70	71	115.2*	570	261	143	114.7*	113	107	84	34	15
27	86	12	72	66	110.0	567	257	138	109.6	102	103	84	33	14
28	87	13	48	42	105.2	---	---	---	104.9	---	---	--	--	--
29	88	14	50	42	99.2	557	245	128	98.9	88	100	80	31	13
30	89	15	72	38	100.9	568	241	124	100.7	94	94	86	30	13
31	90	16	37	30	98.9	561	246	129	98.7	92	89	73	30	12
Mean			66	60	118.6	558	259	140	117.3	107	99	76	33	17

*Adjusted for burst in progress at time of measurement.

Numbers in parentheses in the column headings denote frequencies in MHz.
Equipment problems produced the gaps shown here in the AFGL Sagamore Hill observations.
The International and American sunspot numbers represent provisional values.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

MARCH 1983

Date	RELATIVE SUNSPOT NUMBERS: Zurich or International (R_I) Monthly Mean	Zurich or International (R_I) Smoothed	American (R_A) Monthly Mean	American (R_A) Smoothed	Derived (R_S) Monthly Mean	Derived (R_S) Smoothed	2800 MHz RADIO FLUX Adjusted to 1 AU (S_a) Monthly Mean	2800 MHz RADIO FLUX Adjusted to 1 AU (S_a) Smoothed
Jul 79	159.4	155	140.5	145	123.1	145	171.4	192
Aug	142.2	155	125.1	144	129.2	145	177.0	192
Sep	188.4	156	184.0	143	156.5	144	202.3	191
Oct	186.2	158	178.2	144	171.7	145	216.4	192
Nov	183.3	162	176.5	149	182.9	149	226.8	196
Dec	176.3	164	157.6	152	151.0	152	197.2	199
Jan 80	159.6	164	145.3	153	153.6	154	199.6	200
Feb	155.0	163	133.9	154	148.7	155	195.1	200
Mar	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140	154.3	146	152.1	157	198.2	203
Aug	158.7	141	170.4	147	182.1	158	226.0	203
Sep	167.3	143	174.5	148	177.7	158	221.9	204
Oct	162.4	142	157.0	146	178.6	156	222.8	202
Nov	137.5	139	138.8	142	157.6	151	203.3	197
Dec	150.1	138	145.0	140	155.5	149	201.4	195
Jan 82	111.2	137	110.4	139	124.2	148	173.4	195
Feb	163.6	133	161.0	134	163.6	144	208.9	191
Mar	153.8	129	155.5	130	163.0	139	208.3	186
Apr	122.0	124	121.9	124	113.9	134	162.9	182
May	82.2	120	82.6	120	97.7	129	147.9	177
Jun	110.4	117	113.5	118	129.6	127	177.4	175
Jul	106.1	115*	113.3	117	116.0	125	164.8	174
Aug	107.6	109*	110.5	111	123.9	120	172.1	168
Sep	118.8	101*	117.8	**105**	118.5	112	167.1	161
Oct	94.7	**95(2)***	90.1	**98**	111.8	**104**	160.9	---
Nov	98.1	**90(5)***	93.2	**94**	114.8	**99**	163.7	---
Dec	127.0	**86(7)***	145.0	**90**	146.7	**95**	193.2	---
Jan 83	85.8†	**82(8)***	82.8	**85**	86.7	**90**	137.7	---
Feb	50.1†	**79(9)***	53.4	**82**	67.2	**86**	119.6	---
Mar	66.5†	**77(11)***	---	**80**	64.7	**85**	117.3	---
Apr	---	**75(13)***	---	**78**	---	**82**	---	---
May	---	**72(15)***	---	**75**	---	**79**	---	---
Jun	---	**69(17)***	---	**71**	---	**75**	---	---
Jul	---	**68(18)***	---	**70**	---	**74**	---	---
Aug	---	**67(20)***	---	**69**	---	**73**	---	---
Sep	---	**66(22)***	---	**68**	---	**72**	---	---

*An asterisk marks either a value of the observed 12-month running mean or of a predicted 12-month average that is based in part on preliminary observations.

Boldface entries indicate predicted values and parentheses enclose the absolute value of the 90% confidence limits. All tabulated entries of the American sunspot number are final values. The two columns headed "Derived" represent a sunspot number computed from a linear regression equation between the 2800 MHz solar flux (adjusted to 1 AU) and the Zurich sunspot number.

†International numbers replaced the Zurich values in January 1981.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	119	117	115	109	101	95 (2)	90 (5)	86 (7)
1983	82 (8)	79 (9)	77 (11)	75 (13)	72 (15)	69 (17)	68 (18)	67 (20)	66 (22)	66 (23)	66 (23)	65 (24)
1984	63 (24)	61 (25)	57 (25)	53 (26)	51 (28)	51 (29)	49 (29)	47 (29)	45 (29)	43 (28)	41 (27)	39 (27)
1985	38 (27)	37 (26)	36 (25)	36 (25)	35 (25)	33 (24)	32 (22)	31 (21)	30 (21)	30 (22)	29 (22)	28 (23)
1986	28 (23)	27 (23)	25 (23)	24 (22)	22 (22)	20 (21)	18 (20)	16 (19)	16 (18)	15 (17)	15 (15)	15 (14)

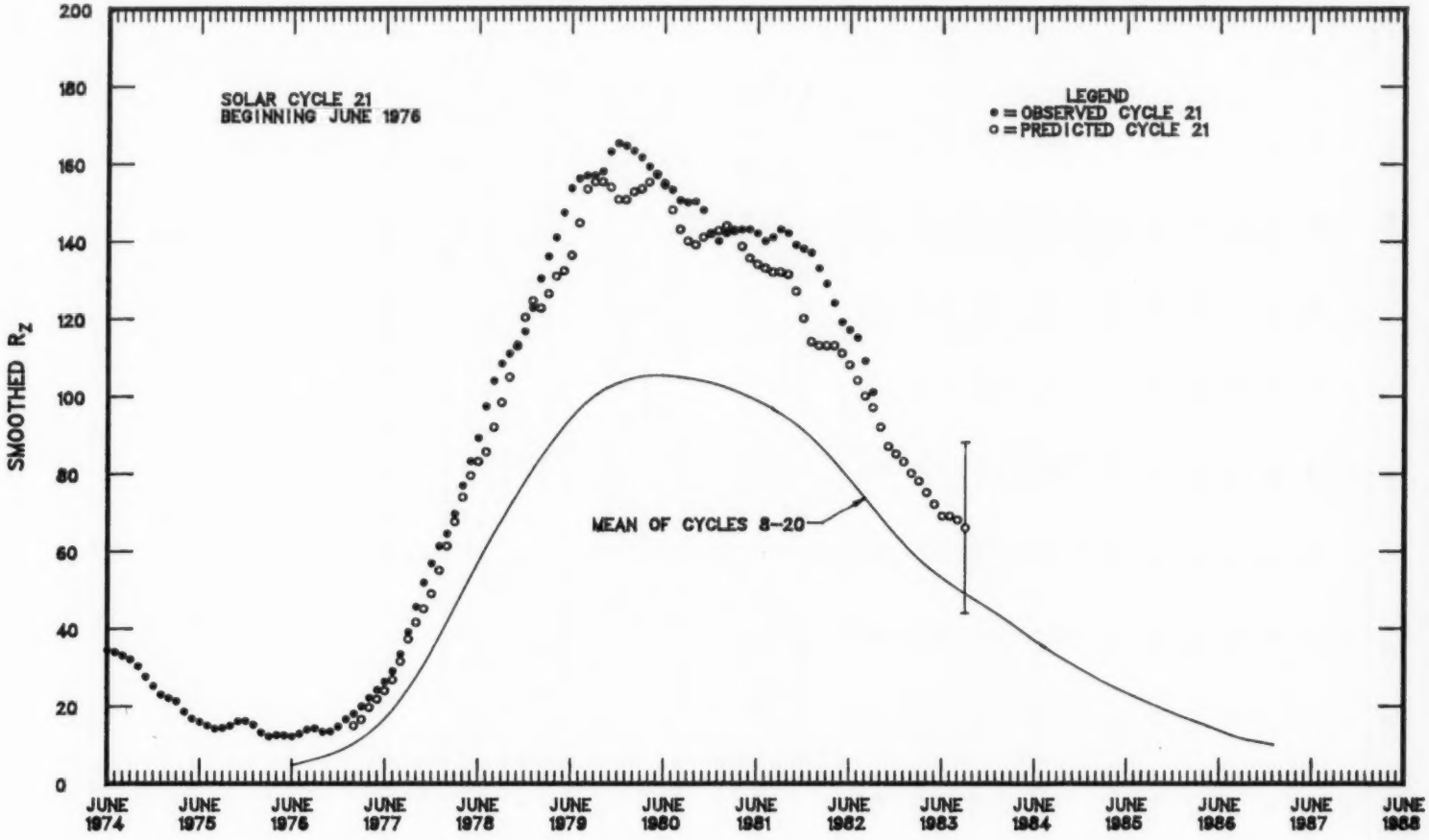
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through 1982, and on provisional international numbers thereafter. Some table entries after the June 1976 value will change slightly, when we incorporate final data for 1983.

The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 10 in the February 1983 edition of the "Solar-Geophysical Data" supplement.) By adding to and subtracting from each prediction the number in parentheses, one generates the 90% confidence interval. Consider, for example, the September 1983 prediction tabulated above. There exists a 90% chance that in September 1983 the actual smoothed sunspot number will fall somewhere between 44 and 88.

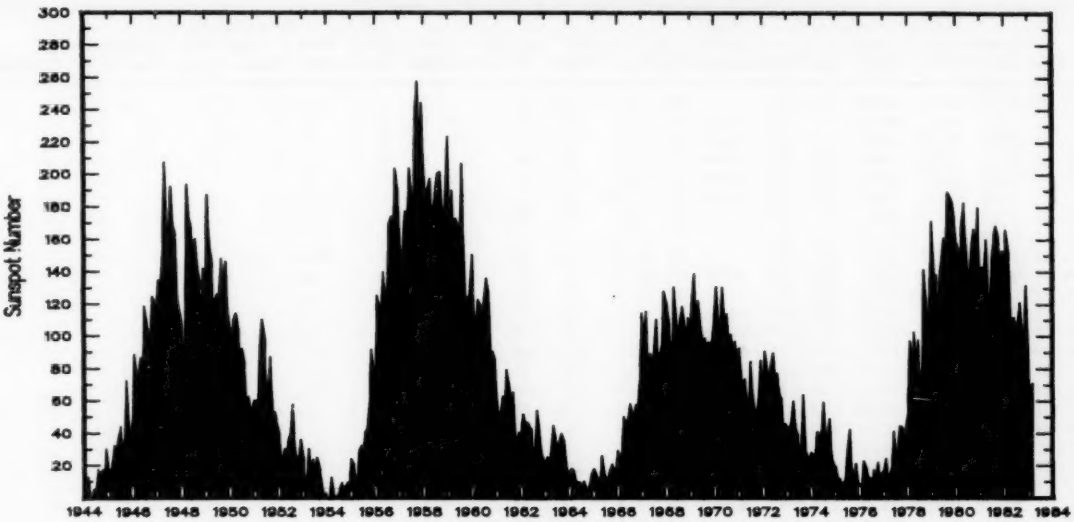
THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL ESTIMATES OF SMOOTHED SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In "Solar-Geophysical Data," Issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



MONTHLY MEAN SUNSPOT NUMBERS
January 1944 – March 1983



MONTHLY MEAN SUNSPOT NUMBERS

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1944	3.7	0.5	11.0	0.3	2.5	5.0	5.0	16.7	14.3	16.9	10.8	28.4
1945	18.5	12.7	21.5	32.0	30.6	36.2	42.6	25.9	34.9	68.8	46.0	27.4
1946	47.6	86.2	76.6	75.7	84.9	73.5	116.2	107.2	94.4	102.3	123.8	121.7
1947	115.7	133.4	129.8	149.8	201.3	163.9	157.9	188.8	169.4	163.6	128.0	116.5
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.9	63.6	37.7	32.6	40.0
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0
1983	85.8*	50.1*	66.5*									

*Provisional

H - ALPHA SOLAR FLARES

MARCH 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
MANI	01	0020E	0024	0028D	S13	E56		03	5.2	8D	SF	1		V		30	.5	F
HOLL	01	0021	0022	0033	S13	E51	4102	03	4.9	12	SN	2		C		60		F
PALE	01	0025	0026	0036	S12	E54	4102	03	5.1	11	SN	3		C		103		
PALE	01	0211	0218U	0231	S19	E64	4104	03	6.0	20	SN	3		C		52		
PALE	01	0304	0305	0313	S21	E59	4104	03	5.7	9	SF	3		C		64		
LEAR	01	0356	0356	0404	S14	E08	4098	03	1.8	8	SF	3		C		25		
ISTA	01	0715		0722	S15	W88		02	22.6	7	SB							D
ISTA	01	0715		0724	S21	E60		03	5.9	9	SN							E
ATHN	01	0715E	0717	0724	S10	W86		02	22.8	9D	SN	3		V	0717			
LEAR	01	0822	0822	0826	S08	W58	4100	02	25.0	4	SF	3		C		16		
ISTA	01	1100		1110	S21	W88		02	22.7	10	SN							D
RAMY	01	1544	1620	1639	S14	E45	4102	03	5.1	55	SN	3		C		78		
RAMY	01	1615	1628	1633	S21	E57	4104	03	6.1	18	SF	3		C		38		
RAMY	01	1659	1717	1839	S19	E55	4104	03	5.9	100	SN	3		C		30		
PALE	01	1824	1831	1847	S12	E44	4102	03	5.1	23	SN	3		C		80		F
HOLL	01	1846E	1927	2104D	S24	E52	4104	03	5.8	138D	1F	3		C		247		K
HOLL	01	1846E	2058	2104D	S24	E52	4104	03	5.8	138D	2B	3		C		417		ZUK
RAMY	01	1854	1913	1925	S14	E44	4102	03	5.1	31	SF	3		C		46		
PALE	01	1910	1910	1919	S12	E44	4102	03	5.1	9	SF	3		C		20		
RAMY	01	1931	1940	1956	S13	E48	4102	03	5.4	25	SF	3		C		137		
RAMY	01	1939	1940	1946	S16	W03	4098	03	1.6	7	SF	3		C		50		
HOLL	01	1942E	1942U	1949	S15	W03	4098	03	1.6	7D	SN	3		C		55		F
PALE	01	2004	2004	2016	S19	E56	4104	03	6.1	12	SF	3		C		28		
PALE	01	2054	2058	2108	S22	E51	4104	03	5.8	14	1B	3		C		169		FE
RAMY	01	2054	2055	2101D	S24	E51	4104	03	5.8	7D	SN	3		C		106		F
HOLL	01	2102	2114	2148D	S15	W04	4098	03	1.6	46D	2B	3		C		548		
PALE	01	2103	2117	2225	S14	W04	4098	03	1.6	82	1N	3		C		408		U
PALE	01	2206	2210	2223	S19	E52	4104	03	5.9	17	SN	3		C		101		F
HOLL	01	2210E	2210U	2215D	S24	E52	4104	03	5.9	5D	SB	2		C		75		E
PALE	01	2313	2315	2320	S19	E49	4104	03	5.7	7	1N	3		C		179		
LEAR	01	2321	2326	2331	S21	E49	4104	03	5.7	10	SN	3		C		130		F
PALE	01	2325	2326	2332	S19	E48	4104	03	5.6	7	SF	3		C		103		
PALE	02	0023	0031	0037	S19	E53	4104	03	6.1	14	SF	3		C		46		
PALE	02	0136	0140	0157	S19	E52	4104	03	6.0	21	1N	3		C		166		F K
PALE	02	0136	0149	0157	S19	E52	4104	03	6.0	21	1N	3		C		178		K
PALE	02	0159	0204	0214	S19	E52	4104	03	6.1	15	SB	3		C		103		
PALE	02	0318	0318	0332	S19	E51	4104	03	6.0	14	SF	3		C		29		
PALE	02	0355	0357	0402	S17	E48	4104	03	5.8	7	SF	3		C		27		
LEAR	02	0419	0423	0435	S20	E49	4104	03	5.9	16	SB	3		C		45		F
LEAR	02	0711	0714	0719	S20	E47	4104	03	5.9	8	SF	3		C		82		F
LEAR	02	0918	0923	0953D	S20	E45	4104	03	5.8	35D	SF	3		C		61		K
LEAR	02	0918	0934	0953D	S20	E45	4104	03	5.8	35D	1N	3		C		200		K
PALE	02	2124E	2128U	2141D	S19	E40	4104	03	5.9	17D	SF	3		C		60		
PEKG	04	0654	0701	0800	S15	W38		03	1.4	66	1N			C	0701	168	2.2	E
ATHN	04	0706E	0715	0758	S18	W38		03	1.4	52D	1B	2		V	0715	207	2.8	
MANI	04	0712E	0714	0755	S18	W39		03	1.3	43D	1B	1		V		175	2.3	F
PEKG	05	0004	0008	0013	S09	W09		03	4.3	9	SN			P	0008	92	.9	E
PEKG	06	0225	0227	0230	S15	W61		03	1.5	5	SF			P	0227	63	1.3	E
PEKG	06	0720	0726	0741	S13	W13		03	5.3	21	SB			C	0726	60	.6	E
ATHN	06	0730	0735	0742	S12	W08		03	5.7	12	SB	4		V	0735	159	1.7	
ATHN	06	0843	0847	0855	S22	W03		03	6.1	12	SN	4		V	0847	127	1.4	
LEAR	08	0053	0054	0101	S21	W71	4099	03	2.6	8	SF	3		C		20		H
LEAR	08	0207	0209	0229	S20	W31	4104	03	5.7	22	SF	3		C		44		F
LEAR	08	0409	0409	0414	S23	W33	4104	03	5.6	5	SF	3		C		29		
LEAR	08	0414	0415	0419	S14	W39	4102	03	5.2	5	SF	3		C		20		
LEAR	08	0454	0455	0508	S18	W32	4104	03	5.8	14	SF	3		C		69		F
LEAR	08	0551	0556	0600	S24	W35	4104	03	5.5	9	SN	3		C		30		
LEAR	08	0847	0848	0857	S23	W36	4104	03	5.6	10	SF	3		C		75		
WEND	08	0848	0850	0856	S22	W35		03	5.7	8	SN			C	0850	56	.7	
RAMY	08	1334	1337	1345	S22	W38	4104	03	5.6	11	SF	3		C		28		
RAMY	08	1359	1400	1443D	S14	W45	4102	03	5.2	44D	SF	3		C		23		
RAMY	08	1505	1511	1519	S04	W10		03	7.9	14	SF	3		C		46		
HOLL	08	1544	1544	1550	S22	W40	4104	03	5.6	6	SN	3		C		45		
RAMY	08	1547	1550	1617	S08	W57	4105	03	4.4	30	SF	3		C		48		
RAMY	08	1547E	1555	1600	S23	W38	4104	03	5.7	13D	SF	3		C		40		F
HOLL	08	1710	1712	1714D	S07	W59	4105	03	4.3	4D	SF	3		C		24		

H - ALPHA SOLAR FLARES

MARCH 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	08	1711	1712	1714D	S19	W40	4104	03	5.7	3D	SF		3	C		21		
PALE	08	1758	1759	1808	S02	W10	4110	03	8.0	10	SF		3	C		21		
PALE	08	1827	1827	1835	S19	W41	4104	03	5.6	8	SF		3	C		36		
HOLL	08	1827	1827	1833	S18	W41	4104	03	5.6	6	SF		3	C		20		
HOLL	08	1841	1843	1850	S07	W57	4105	03	4.5	9	SF		3	C		15		F
PALE	08	1842	1843	1848	S08	W58	4105	03	4.4	6	SF		3	C		14		
HOLL	08	1918	1933	1949	S07	W59	4105	03	4.4	31	SF		3	C		66		
HOLL	08	1956	2001	2020	S20	W42	4104	03	5.6	24	SN		3	C		77		F
HOLL	08	2050	2051	2055	S12	W48	4102	03	5.2	5	SF		3	C		18		H
HOLL	08	2117	2118	2132	S07	W60	4105	03	4.4	15	SF		3	C		29		
HOLL	08	2141	2143	2156	S13	W49	4102	03	5.2	15	SN		3	C		69		F
HOLL	08	2153	2157	2203	S06	W59	4105	03	4.5	10	SF		3	C		47		F
HOLL	08	2221	2221	2231	S18	W43	4104	03	5.7	10	SF		3	C		20		
HOLL	08	2301	2311	2317	S12	W49	4102	03	5.3	16	SF		3	C		21		
PALE	09	0011E	0011U	0048D	S21	W39	4104	03	6.0	37D	SF		3	C		75		F
HOLL	09	0017	0017	0048	S18	W42	4104	03	5.8	31	1B		3	C		207		E
LEAR	09	0020E	0020U	0104	S20	W41	4104	03	5.9	44D	SF		2	C		159		F
PALE	09	0233	0235	0238	S24	W40	4104	03	6.0	5	SF		3	C		27		
LEAR	09	0435	0436	0442	S08	W65	4105	03	4.3	7	SF		3	C		29		
ISTA	09	0703		0712	S20	W48		03	5.6	9	SF							E
LEAR	09	0754	0758	0811	S20	W45	4104	03	5.9	17	SF		3	C		31		
ISTA	09	0825		0828	N08	W17		03	8.1	3	SF							D
WEND	09	0834	0839	0847	S21	W48		03	5.7	13	SF			C	0839	25	.4	
RAMY	09	1211	1212	1220	S21	W49	4104	03	5.7	9	SF		3	C		62		
RAMY	09	1253	1256	1304	S03	W21	4110	03	8.0	11	SF		3	C		23		
RAMY	09	1340	1345	1402	S03	W20	4110	03	8.1	22	SN		3	C		100		
RAMY	09	1458	1504	1548	S03	W21	4110	03	8.1	50	SN		3	C		54		
HOLL	09	1612	1613	1617	S18	W51	4104	03	5.8	5	SF		3	C		26		
HOLL	09	1625	1626	1637	S19	W52	4104	03	5.7	12	SF		3	C		31		
PALE	09	1732	1733	1740	S02	W23	4110	03	8.0	8	SF		3	C		29		
HOLL	09	1821	1828	1830	S19	W53	4104	03	5.7	9	SF		3	C		22		
PALE	09	2034	2035	2041	S03	W24	4110	03	8.1	7	SF		3	C		34		
LEAR	10	0004	0010U	0026	S08	W76	4105	03	4.3	22	SF		2	C				F
MANI	10	0006E	0010	0025	S09	W77		03	4.2	19D	SF		1	V				F
HOLL	10	0006	0009	0056D	S07	W77	4105	03	4.2	50D	SN		3	C		92		UF
PEKG	10	0007	0010	0016	S08	W74		03	4.5	9	SN			C	0010	76		E
PALE	10	0007	0009	0024	S09	W76	4105	03	4.3	17	SF		3	C				F
PALE	10	0028	0048	0118	S08	W73	4105	03	4.5	50	SF		3	C				F
PALE	10	0102	0102	0108	S03	W29	4110	03	7.9	6	SF		3	C		44		
LEAR	10	0259	0301	0317	S22	W51	4104	03	6.2	18	SN		3	C		34		
LEAR	10	0504	0512	0610	S04	W38	4110	03	7.4	66	SF		3	C		29		
LEAR	10	0834	0909	0932D	S26	W58	4104	03	5.8	58D	1N		3	C		194		F
PEKG	10	0835	0841	0900D	S24	W59		03	5.8	25D	1N			C	0841	168	3.6	F
WEND	10	0835	0920	1047	S23	W52		03	6.3	132	2N			C	0920	306	5.6	
ISTA	10	0840		0945	S23	W53		03	6.3	65	2B							KU
ATHN	10	0850	0853	1015	S22	W50		03	6.5	85	1B		3	V	0853	255	4.0	
RAMY	10	1144	1153	1238	S22	W57	4104	03	6.1	54	SN		3	C		57		
RAMY	10	1224	1228	1238	S04	W34	4110	03	8.0	14	SF		3	C		26		
RAMY	10	1246	1258	1322	S21	W60	4104	03	5.9	36	SF		3	C		31		
RAMY	10	1335	1337	1340	S06	W74	4105	03	5.0	5	SF		3	C		33		
WEND	10	1511	1515	1521	S11	W89		03	3.9	10	SN			C	1515	25		
HOLL	10	1511	1517	1528	S07	W85	4105	03	4.3	17	SF		3	C		46		
HOLL	11	0018	0026	0039	S01	W42	4110	03	7.9	21	SF		3	C		30		
LEAR	11	0120	0146	0218	S03	W45	4110	03	7.7	58	SF		3	C		71		F
PALE	11	0121E	0148U	0157D	S05	W45	4110	03	7.7	36D	SF		3	C		35		F
PEKG	11	0142	0159	0240	S03	W49		03	7.4	58	SN			P	0159	126	2.0	E
PEKG	14	0546	0547	0548	S06	W88		03	7.6	2	SF			P	0547	50		E
PEKG	14	0624	0628	0642	S06	W88		03	7.7	18	SF			P	0628	42		E
HOLL	14	1639	1705	1708	S14	E56		03	18.9	29	SF		3	C		18		
HOLL	14	1651	1654	1656	S05	E84		03	21.0	5	SF		3	C		11		
HOLL	14	1713	1721	1732	S07	E82		03	20.9	19	SF		3	C		25		F
HOLL	14	1733	1739	1744	S14	E56		03	19.0	11	SF		3	C		47		
HOLL	14	1757	1818	1819	S05	E83		03	21.0	22	SF		3	C		25		
HOLL	14	1832	1833	1841	S08	E84		03	21.1	9	SF		3	C		16		
HOLL	14	1904	1919	1938	S09	E72	4116	03	20.2	34	SF		3	C		45		
HOLL	14	1907	1909	1923	S14	E54	4115	03	18.9	16	SF		3	C		21		
HOLL	14	2137	2142	2149	S07	E78	4116	03	20.7	12	SF		3	C		13		

H - ALPHA SOLAR FLARES

MARCH 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	14	2323	2329	2345	S08	E77	4116	03	20.8	22	SF			3	C		19		
LEAR	15	0409E	0409U	0447	S19	E58		03	19.6	38D	SF			2	C		89		FS
RAMY	15	1539	1545	1554	S15	E44	4115	03	19.0	15	SF			3	C		56		
HOLL	15	1814	1815	1827	N19	W11	4117	03	14.9	13	SN			3	C		58		F
HOLL	15	1853	1856	1951	S08	E72	4116	03	21.2	58	SN			3	C		83		F
RAMY	15	1854	1856	1932	S09	E70	4116	03	21.0	38	SN			3	C		49		
LEAR	16	0034	0036	0042	S14	E41	4115	03	19.1	8	SF			3	C		19		
LEAR	16	0110	0112	0121	S07	E63	4116	03	20.8	11	SF			3	C		39		
LEAR	16	0111	0113	0127	S14	E39	4115	03	19.0	16	SF			3	C		34		F
LEAR	16	0136	0138	0146	S08	E69	4116	03	21.2	10	SF			3	C		44		
PALE	16	0138	0139	0143	S07	E66	4116	03	21.0	5	SF			2	C		24		
PEKG	16	0314	0317	0330	S13	E36		03	18.9	16	SF				C	0317	59	.7	E
PALE	16	0315	0324	0330	S13	E36	4115	03	18.9	15	SF			2	C		49		
LEAR	16	0338	0341	0359	S14	E37	4115	03	18.9	21	SN			3	C		67		F
PEKG	16	0340	0350	0401	S14	E36		03	18.9	21	SF				C	0350	92	1.2	E
PEKG	16	0426	0431	0440	S13	E35		03	18.8	14	SF				C	0431	34	.4	E
PEKG	16	0531	0534	0556	S14	E35		03	18.9	25	SF				C	0534	29	.4	E
PEKG	16	0737	0741	0749	S13	E34		03	18.9	12	SF				C	0741	17	.2	D
PEKG	16	0757	0802	0810	S13	E34		03	18.9	13	SF				C	0802	25	.3	E
PALE	16	1745	1752	1800	S08	E51	4116	03	20.6	15	SF			3	C		40		F
HOLL	16	1745	1752	1812	S09	E51	4116	03	20.6	27	SF			3	C		26		
PALE	16	1756	1800	1803	S13	E29	4115	03	18.9	7	SF			3	C		22		
HOLL	16	1815	1816	1822	S09	E52	4116	03	20.7	7	SF			3	C		25		
HOLL	16	1846	1850	1858	S07	E56	4116	03	21.0	12	SF			3	C		24		
RAMY	16	1924	1928	1936	S10	E55	4116	03	20.9	12	SF			3	C		56		
PALE	16	1925	1926	1928	S08	E49	4116	03	20.5	3	SF			3	C		29		
PALE	16	2103	2120	2137D	S08	E47	4116	03	20.4	34D	SF			3	C		108		
HOLL	16	2105	2106	2346D	S07	E53	4116	03	20.9	161D	SF			3	C		26		K
HOLL	16	2105	2209	2346D	S07	E53	4116	03	20.9	161D	1N			3	C		186		FHK
LEAR	16	2334E	2337	2343	S10	E52	4116	03	20.9	9D	SF			3	C		27		
HOLL	17	0015	0015	0052D	S08	E48	4116	03	20.6	37D	SF			3	C		27		F
PALE	17	0223	0226	0252	S06	E49	4116	03	20.8	29	SN			3	C		73		
LEAR	17	0224	0227	0246	S07	E52	4116	03	21.0	22	SB			3	C		45		
LEAR	17	0441	0445	0556	S08	E46	4116	03	20.6	75	SF			3	C		43		
LEAR	17	0701	0701	0704	S14	E25	4115	03	19.2	3	SF			3	C		30		
LEAR	17	0723	0724	0753	S07	E46	4116	03	20.8	30	SN			3	C		99		F
BUCA	17	0724E		0746	S07	E44		03	20.6	22D	SN				C	0724	107	1.5	E
LEAR	17	0900	0904	0940	S08	E48	4116	03	21.0	40	1B			3	C		223		F
MANI	17	0904E	0905U	0908D	S03	W50		03	13.6	4D	SB			1	V		80	1.3	F
PEKG	17	0905	0912	0946	S07	E47		03	20.9	41	1N				C	0912	160	2.4	F
RAMY	17	1151E	1151U	1214	S08	E43	4116	03	20.7	23D	SF			3	C		85		
RAMY	17	1359	1401	1416	S08	E43	4116	03	20.8	17	SF			3	C		36		
HOLL	17	1458	1459	1512	S07	E38	4116	03	20.5	14	SN			3	C		87		F
RAMY	17	1459	1500	1508	S07	E40	4116	03	20.6	9	SN			3	C		81		
RAMY	17	1939	1955	2000	S06	E42	4116	03	21.0	21	SN			3	C		56		
HOLL	17	1947	1949	2003	S06	E43	4116	03	21.0	16	SN			3	C		49		F
HOLL	17	2011	2013	2101	S08	E42	4116	03	21.0	50	1B			3	C		358		U K
HOLL	17	2011	2017	2101	S08	E42	4116	03	21.0	50	1B			3	C		434		K
RAMY	17	2012	2014	2106	S07	E42	4116	03	21.0	54	1B			3	C		340		Z
LEAR	17	2315E		2322	S14	E14	4115	03	19.0	7D	SF			2	C		35		
LEAR	17	2330	2332	2342	S08	E39	4116	03	20.9	12	SN			3	C		27		H
PEKG	18	0038	0052	0135	S13	E11		03	18.9	57	SB				C	0052	113	1.2	FK
PEKG	18	0038	0102	0135	S13	E11		03	18.9	57	SB				C	0102	160	1.7	F
HOLL	18	0048E	0049U	0105D	S10	E11	4115	03	18.9	17D	SN			2	C		75		F
LEAR	18	0050	0051	0158	S15	E13	4115	03	19.0	68	SN			3	C		177		F
LEAR	18	0154	0156	0224	S08	E37	4116	03	20.9	30	SB			3	C		119		H
PALE	18	0154	0157	0223	S08	E37	4116	03	20.9	29	SN			3	C		93		F
PEKG	18	0156	0202	0212	S07	E37		03	20.9	16	1N				C	0202	185	2.4	F
PEKG	18	0440	0441	0451	S08	E34		03	20.7	11	1N				C	0441	197	2.4	F
LEAR	18	0440	0444	0454	S07	E38	4116	03	21.0	14	SB			3	C		138		F
LEAR	18	0548	0550	0554	S13	E13	4115	03	19.2	6	SF			3	C		26		
LEAR	18	0801	0808	0851	S11	E12	4115	03	19.2	50	1B			3	C		351		F
PEKG	18	0806	0808	0820	S11	E09		03	19.0	14	1N				P	0808	210	2.2	FJ
BUCA	18	0810E	0812	0835	S10	E08		03	18.9	25D	1N				C	0812	483	5.0	E
RAMY	18	1329	1334	1339	S11	E41	4118	03	21.6	10	SN			3	C		48		
RAMY	18	1413	1420	1445	S08	E31	4116	03	20.9	32	SB			3	C		88		
RAMY	18	1459	1508	1536	S06	E31	4116	03	20.9	37	SN			3	C		140		

MARCH 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	18	1507E	1507U	1522D	S05	E30	4116	03	20.9	15D	SF		3	C		43		F
RAMY	18	1550	1556	1609	S13	E06	4115	03	19.1	19	SN		3	C		43		
HOLL	18	1550E	1621	1652	S12	E07	4115	03	19.2	62D	SF		3	C		29		F
RAMY	18	1632	1641	1650	S15	E03	4115	03	18.9	18	SF		3	C		41		
RAMY	18	1744	1745	1825	S15	E02	4115	03	18.9	41	SF		3	C		30		
RAMY	18	1851	1854	1925	S08	E28	4116	03	20.9	34	1B		3	C		226		
HOLL	18	1852	1854	1920	S08	E28	4116	03	20.9	28	SB		3	C		180		FE
LEAR	19	0029	0035	0047	S13	E02	4115	03	19.2	18	SF		3	C		23		
LEAR	19	0159	0200	0210	S13	E00	4115	03	19.1	11	SF		3	C		73		
LEAR	19	0300	0305	0307	S12	E01	4115	03	19.2	7	SF		3	C		51		F
LEAR	19	0308	0316	0339	S12	W01	4115	03	19.1	31	SF		3	C		71		
LEAR	19	0557	0605	0654	S07	E20	4116	03	20.7	57	SF		3	C		42		F
RAMY	19	1421	1424	1431	S14	W04	4115	03	19.3	10	SN		3	C		30		
PALE	20	0046	0048U	0110	S12	W10	4115	03	19.3	24	SF		3	C		42		
LEAR	20	0127	0130	0150	S14	W11	4115	03	19.2	23	SF		3	C		41		
PALE	20	0128	0132	0142	S13	W13	4115	03	19.1	14	SF		3	C		40		
LEAR	20	0254	0259	0322	S13	W13	4115	03	19.1	28	SF		3	C		46		F
PALE	20	0254	0255	0324	S12	W12	4115	03	19.2	30	SF		3	C		40		F
PEKG	20	0257E	0300U	0326D	S13	W13		03	19.1	29D	SN			P	0300	59	.6	E
LEAR	20	0525	0530	0559	S13	W15	4115	03	19.1	34	SN		3	C		71		F
LEAR	20	0653	0656	0714	S13	E02	4116	03	20.4	21	SF		3	C		44		F
LEAR	21	0310	0313	0334	S13	W28	4115	03	19.0	24	SF		3	C		64		F
RAMY	21	1528	1537	1608	S12	W35	4115	03	19.0	40	SF		3	C		103		
HOLL	21	1529	1544	1602D	S14	W39	4115	03	18.7	33D	SF		3	C		99		
RAMY	21	2014	2019	2048	S12	W36	4115	03	19.1	34	SN		3	C		93		
HOLL	21	2014	2019	2030	S10	W36	4115	03	19.1	16	SN		3	C		97		F
PALE	21	2017	2017U	2026D	S12	W37	4115	03	19.1	9D	SF		3	C		53		F
HOLL	21	2123	2125	2147	S11	W36	4115	03	19.2	24	SN		3	C		81		F
LEAR	22	0157	0157	0205	S13	W39	4115	03	19.1	8	SF		3	C		45		F
LEAR	22	0246	0246	0257	S13	W40	4115	03	19.1	11	SF		3	C		64		F
LEAR	22	0345	0346	0409	S13	W04	4118	03	21.9	24	SF		3	C		23		
PALE	22	1935	1935	1946	S11	W11	4118	03	22.0	11	SF		3	C		23		
LEAR	23	0124	0125	0201	S12	W14	4121	03	22.0	37	SF		3	C		56		F
LEAR	23	0721	0734	0803	S12	W18	4121	03	21.9	42	SF		3	C		73		
PEKG	23	0724	0727	0744	S11	W19		03	21.9	20	SF			C	0727	67	.7	E
LEAR	23	0747	0752	0753	S11	W58	4115	03	19.0	6	SF		3	C		20		
PEKG	23	0844	0847	0858	S13	E17		03	24.6	14	SF			C	0847	63	.7	E
ISTA	23	0855		0902	S13	E17		03	24.7	7	SF							E
RAMY	23	1348	1348	1354	S12	W65	4115	03	18.7	6	SF		3	C		17		
RAMY	23	1440	1441	1449	S15	E58		03	28.0	9	SN		3	C		32		
RAMY	23	1526	1534	1545	S12	W23	4121	03	21.9	19	SF		3	C		36		F
RAMY	23	1852	1853	1859	S12	W64	4115	03	19.0	7	SB		3	C		105		
PALE	23	1853	1853	1900	S11	W68	4115	03	18.7	7	SB		3	C		98		
RAMY	23	1927	1929	1956	S13	W21	4121	03	22.2	29	SF		3	C		42		
PALE	23	1930	1931	1948	S14	W23	4121	03	22.1	18	SF		3	C		26		F
LEAR	24	0052	0053	0127	S12	W29	4121	03	21.8	35	SF		3	C		108		F
HOLL	24	1511	1511	1517	S13	E00	4120	03	24.6	6	SF		3	C		20		
PALE	24	1733	1734	1748	S08	W54	4116	03	20.7	15	SF		3	C		33		F
RAMY	24	1734	1736	1745	S07	W53	4116	03	20.8	11	SF		3	C		26		
HOLL	25	1422E	1437U	1451D	S11	E76	4125	03	31.3	29D	SN		3	C		65		F
HOLL	25	1434E	1436U	1451D	S08	W67	4116	03	20.6	17D	SN		3	C		30		
MANI	25	2334	2342	0003	N20	W55		03	21.8	29	SN		1	V		30	.6	F
LEAR	25	2339	2347	0004	N19	W50	4124	03	22.2	25	SN		3	C		19		
LEAR	26	0127	0127	0138	N20	W56	4124	03	21.8	11	SF		3	C		17		
LEAR	26	0219	0221	0226	S14	W19	4120	03	24.7	7	SF		3	C		23		
LEAR	26	0230	0242	0403	N20	W58	4124	03	21.7	93	SN		3	C		43		
PEKG	26	0245E	0246	0248D	N22	W59		03	21.6	3D	SF			C	0246	76	1.7	E
LEAR	26	0730	0732	0749	N20	W59	4124	03	21.8	19	SF		3	C		65		
HOLL	26	1455	1503	1541	N21	W64	4124	03	21.7	46	SF		3	C		17		
RAMY	26	1458	1459	1538	N20	W63	4124	03	21.8	40	SF		3	C		16		
HOLL	26	1543E	1648U	1805	N20	W65	4124	03	21.7	142D	SN		3	C		54		H
RAMY	26	1551	1646	1657	N20	W64	4124	03	21.8	66	SF		3	C		48		
RAMY	26	1705	1716	1725	N20	W63	4124	03	21.9	20	SF		3	C		31		

H - ALPHA SOLAR FLARES

MARCH 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	26	1728	1747	1757	N20	W63	4124	03	21.9	29	SN		3	C		26		
PALE	26	1743	1747	1752	N20	W68	4124	03	21.5	9	SN		3	C		13		
PALE	26	1814	1816	1820	N19	W69	4124	03	21.5	6	SN		3	C				
PALE	26	1851	1856	1904	N19	W69	4124	03	21.5	13	SF		3	C				
PALE	26	1913	1918	1925	N19	W68	4124	03	21.6	12	SN		3	C		32		
RAMY	26	1913	1920	1925	N21	W65	4124	03	21.8	12	SN		3	C		46		
HOLL	26	2051	2109	2115	N22	W70	4124	03	21.5	24	SN		3	C		12		
RAMY	26	2055	2102	2106	N20	W63	4124	03	22.0	11	SF		3	C		17		
HOLL	27	1841	1908	1938	S17	E32	4128	03	30.2	57	SN		3	C		139		F
PALE	27	1859E	1910	1923	S15	E33	4128	03	30.3	24D	SF		4	C		110		U
PEKG	28	0753	0825	0838	S17	E23		03	30.1	45	SF			C	0825	84	.9	E
ATHN	28	0807E	0815	0825	S15	E25		03	30.2	18D	SN		3	V	0815	95	1.2	
PEKG	29	0115	0123	0150	S13	E17		03	30.3	35	SF			C	0123	88	.9	E
HOLL	29	2033	2040	2059	S17	E05	4128	03	30.2	26	SN		3	C		53		F
HOLL	30	0030	0036U	0052	S17	E31	4127	04	1.4	22	SN		2	C		101		F
LEAR	30	0847	0848	0852	S18	E27	4127	04	1.4	5	SF		3	C		24		
PALE	31	0324	0324	0327	S18	E20	4127	04	1.7	3	SF		3	C		20		

"Remarks":

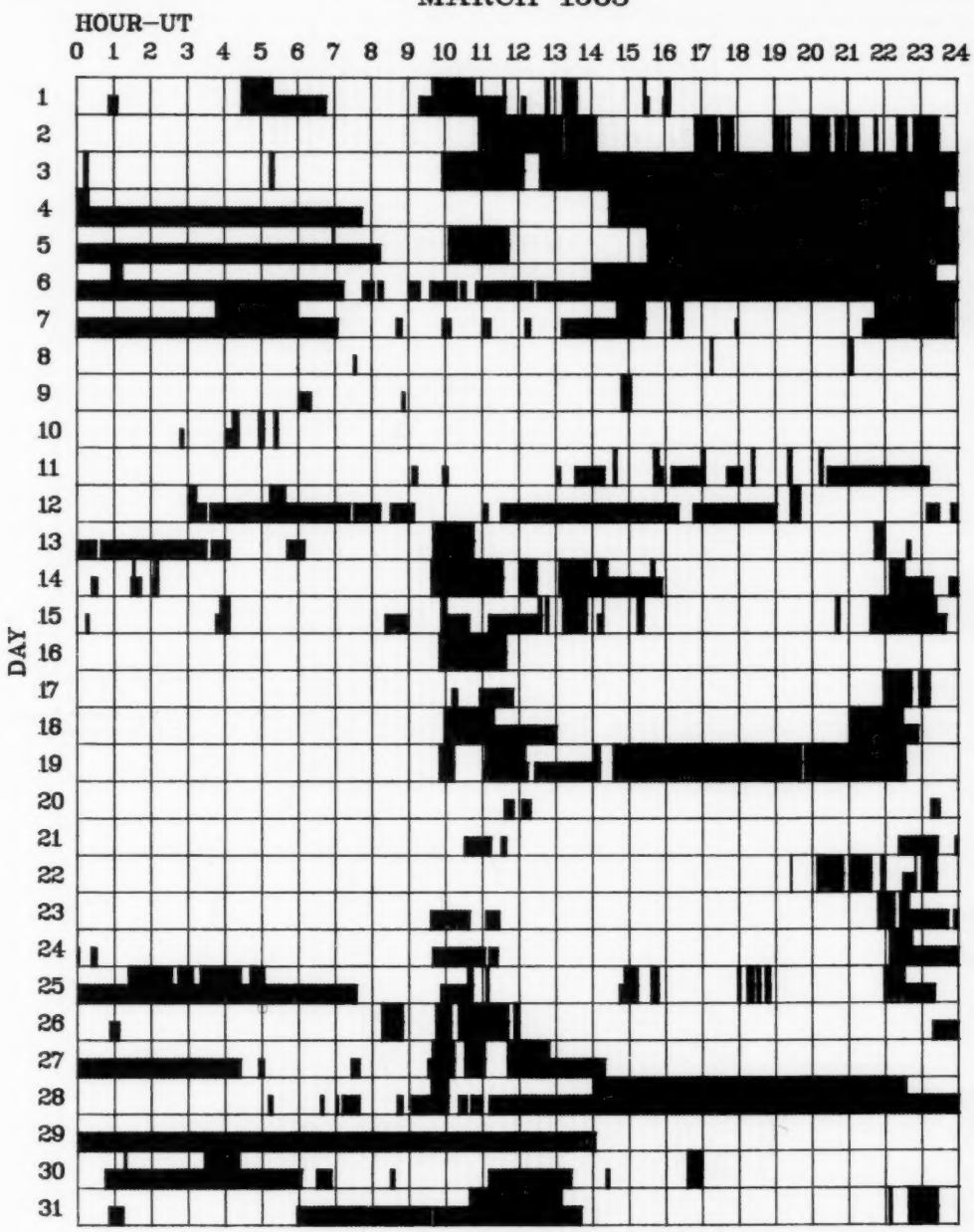
A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of CaII.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

The 4-digit number appearing under "Remarks" denotes the calcium plage region number assigned by the Space Environment Services Center in Boulder, Colorado.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

MARCH 1983



Observatories included in total patrol:

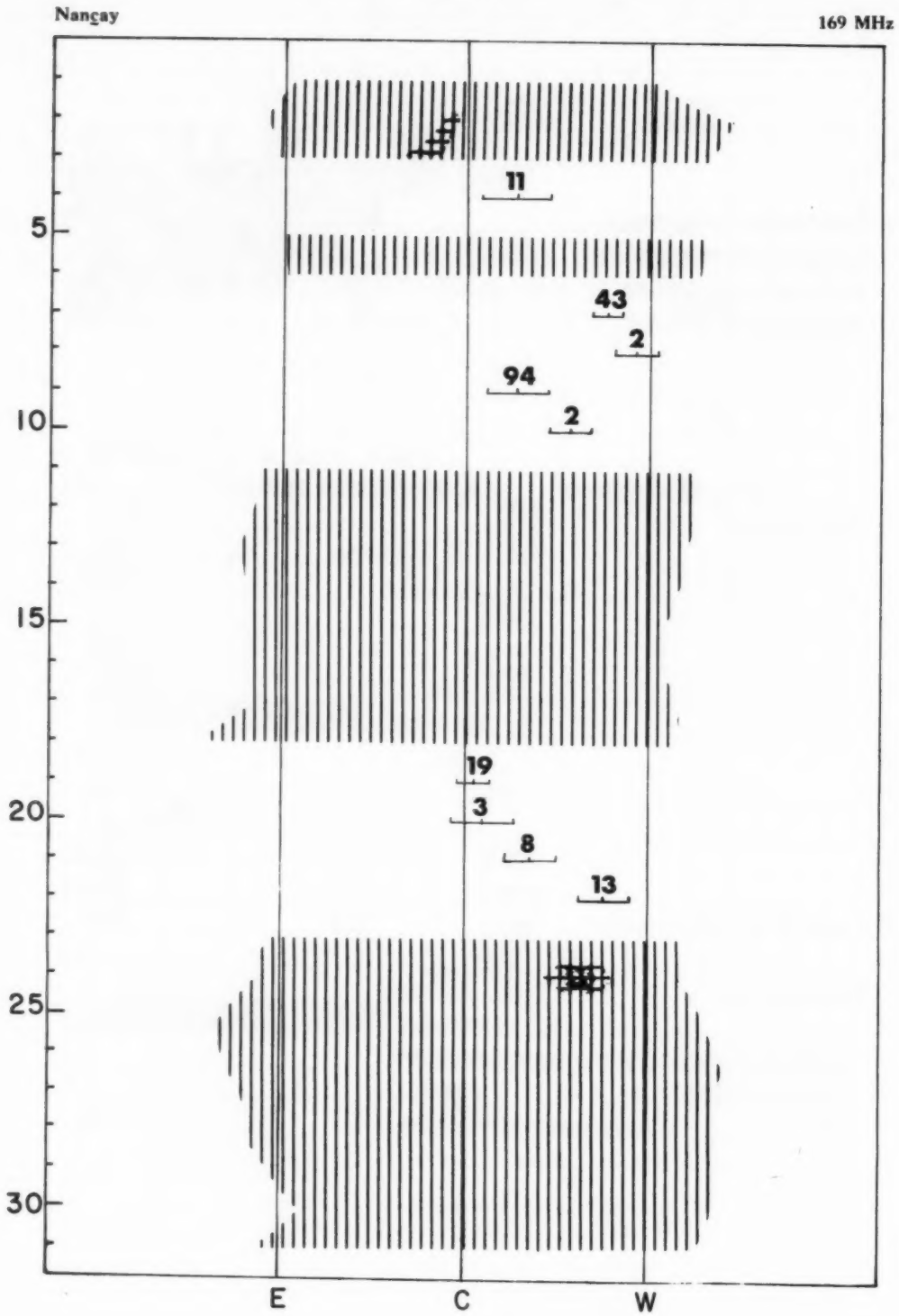
Athens	Holloman	Learmonth	Palehua	Ramey
Bucharest	Istanbul	Manila	Peking	Wendelstein

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

20
Mar 83

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

MARCH 1983

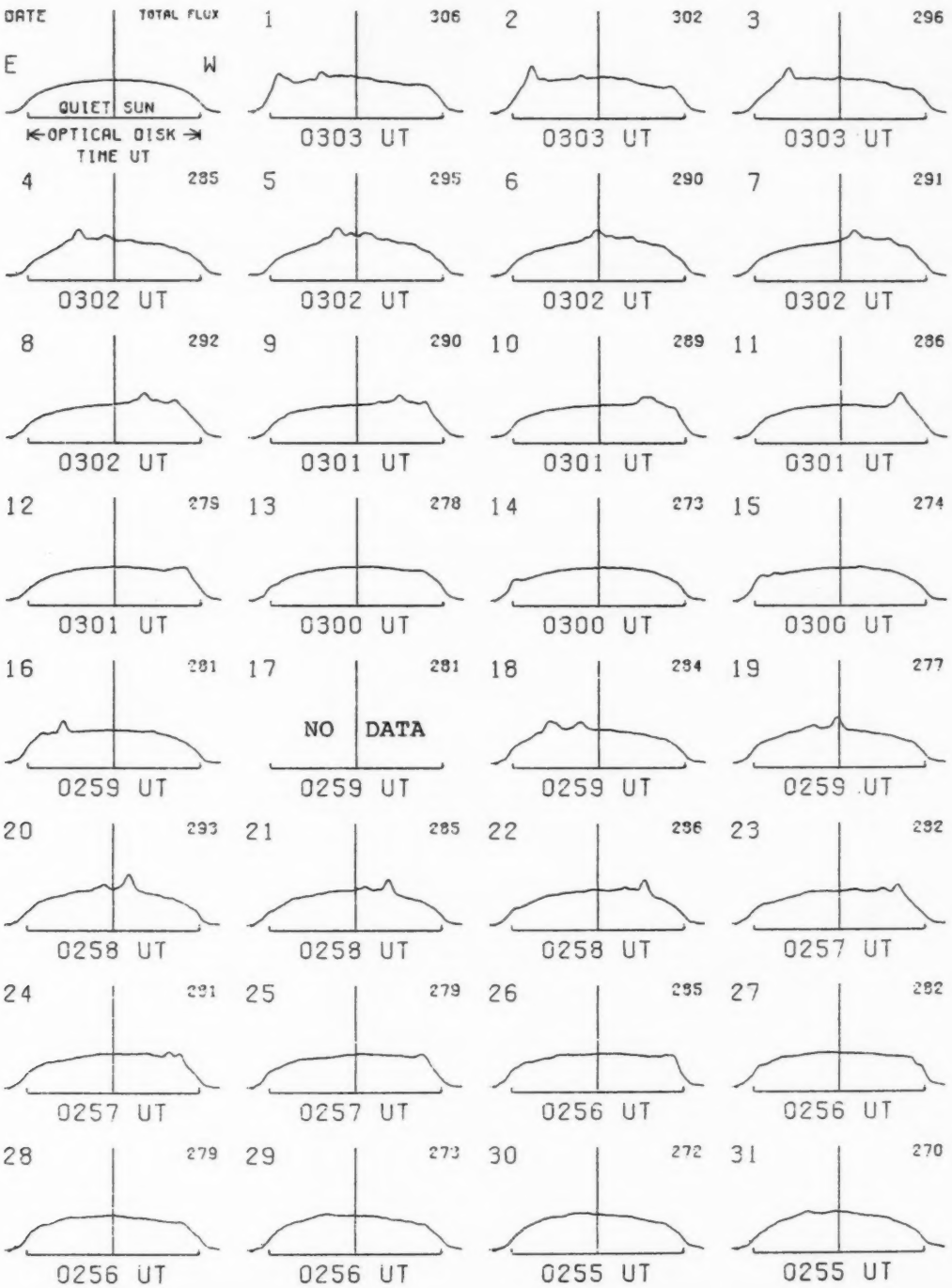


EAST-WEST SOLAR SCANS

MARCH 1983

TOYOKAWA.JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



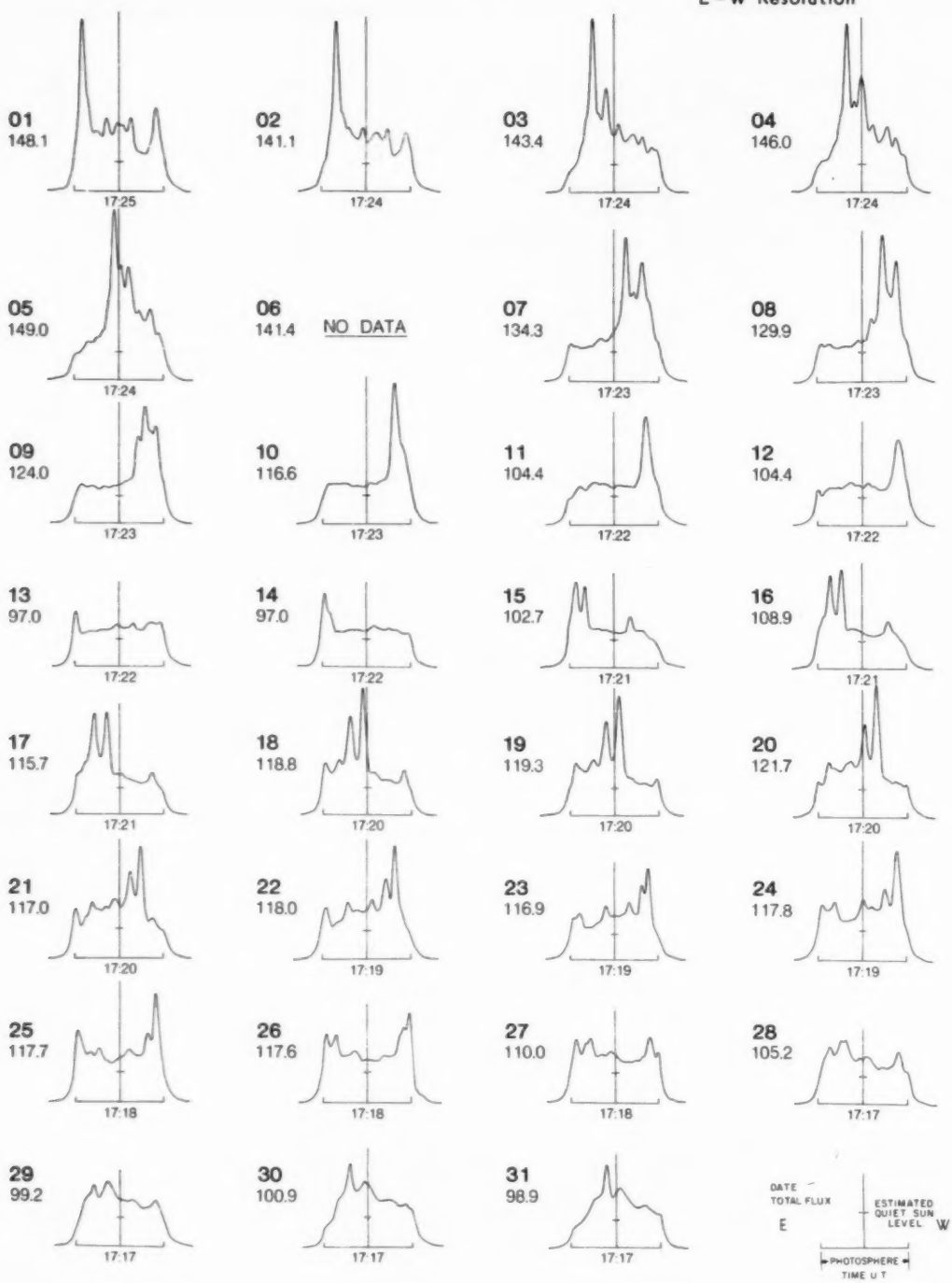
22
Mar 83

EAST-WEST SOLAR SCANS

MARCH 1983

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution

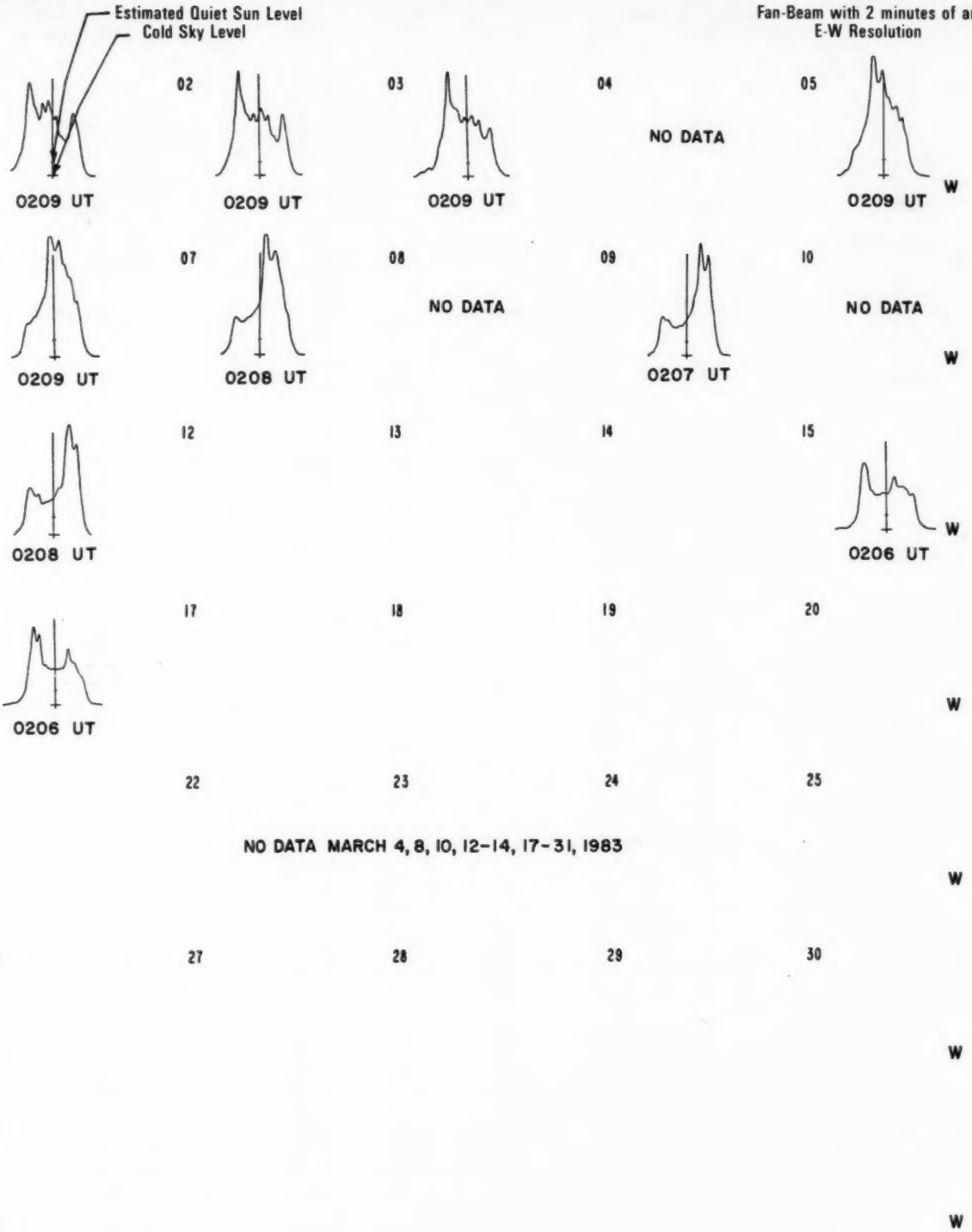


EAST-WEST SOLAR SCANS

Fleurs, Australia

MARCH 1983

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution



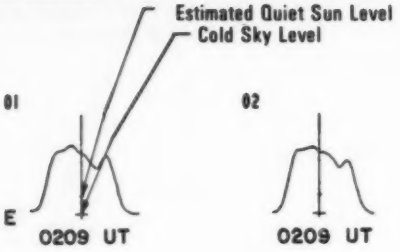
24
Mar 83

EAST-WEST SOLAR SOLAR SCANS

MARCH 1983

Fleurs, Australia

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



01
E
0209 UT

02
0209 UT

03
0209 UT

04
NO DATA

05
0209 UT
W

06
E
0209 UT

07
0208 UT

08
NO DATA

09
0207 UT

10
NO DATA
W

11
E
0208 UT

12

13

14

15
W

16
E
0206 UT

17

18

19

20
W

21

22

23

24

25

NO DATA MARCH 4,8, 10, 12-15, 17-31, 1983

E
W

26

27

28

29

30

E
W

31

E
W

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MARCH 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	2800	OTTA	240	R	1332.0	1343.0	11.0	3.0	2.0		
	2800	OTTA	8	S	1618.2	1618.2	.1	4.0			
	2800	OTTA	20	GRF	1939.0	2002.0	41.00	2.6	1.4		
	2800	OTTA	21	GRF	2052.0	2113.0	130.0	9.0	4.3		
	2800	OTTA	1	S	2054.0	2054.7	2.0	6.4	3.2		
	8800	PALE	8	S	2054.5	2054.6	.3	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	2105.0	2105.2	.3	5.6			
	2800	OTTA	8	S	2105.9	2106.0	.5	2.6			
	2800	OTTA	8	S	2112.0	2112.3	.7	8.6	2.8		
	2695	PENT	3	S	2312.5	2313.0	1.5	21.0	9.0		
	2695	LEAR	8	S	2312.8	2313.0	2.0	23.0			QL=6 ST=3 TYP=3
	2695	PENT	29	PBI	2314.0	2314.0	7.0	4.6	1.8		
	2695	PENT	8	S	2324.9	2325.2	.8	2.0	1.0		
02	2800	OTTA	27	RF	1547.0		63.0	2.2	1.9		
	2800	OTTA	24	R	1547.0	1551.0	4.0	2.2	1.1		
	2800	OTTA	24P	R	1551.0		49.0	2.2			
	2800	OTTA	26	FAL	1640.0	1650.0	10.0	-2.2	-1.1		
	8800	PALE	49	GB	1921.1	1922.1	5.7	440.0			QL=5 ST=2 TYP=6
	2800	OTTA	20	GRF	2030.0	2110.0	70.0	2.4	1.7		
03	2800	OTTA	1	S	1347.0	1348.5	8.0	2.2	1.1		
04	2800	OTTA	20	GRF	1905.0	1930.0	45.0	3.4	1.7		
	2800	OTTA	20	GRF	2055.0	2130.0	50.0	2.6	1.4		
05	2800	OTTA	21	GRF	1425.0	1600.0	115.0	4.6	2.3		
	2800	OTTA	8	S	1544.2	1544.3	.3	2.8			
	2800	OTTA	8	S	1557.3	1557.6	.7	3.2	1.6		
	2800	OTTA	1	S	1833.0	1834.5	6.0	2.8	1.0		
06	2800	OTTA	20	GRF	1930.0	1955.0	75.0	2.0	1.0		
08	2695	LEAR	8	S	0551.1	0551.6	.7	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0849.0	0849.5	1.0	10.0			QL=6 ST=2 TYP=3
	2800	OTTA	2	S/F	1351.0	1352.2	3.0	5.2			
	2800	OTTA	21	GRF	1540.0	1555.0	30.0	2.8	1.6		
	2800	OTTA	2	S/F	1543.0	1543.8	1.0	2.6	1.3		
	2800	OTTA	20	GRF	1645.0	1710.0	60.0	2.8	1.4		
	2800	OTTA	21	GRF	1825.0	1839.0	35.0	3.6	1.5		
	2800	OTTA	1	S	1825.5	1826.1	2.5	2.6	1.4		
	2800	OTTA	21	GRF	1910.0	1936.0	90.0	2.2	1.1		
	2800	OTTA	8	S	1913.0	1913.2	.3	2.2	1.1		
	2800	OTTA	20	GRF	1954.0	1955.0	12.0	2.8	1.4		
	2800	OTTA	21	GRF	2110.0	2150.0	155.0	2.8	2.0		
	2800	OTTA	1	S	2140.5	2141.2	1.5	2.0	1.0		
09	2695	PENT	45	C	0010.2	0011.3	7.8	11.6	5.8		
	2695	LEAR	4	S/F	0010.3	0011.5	4.2	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0010.6	0011.5	1.0	13.0			QL=6 ST=3 TYP=3
	2695	PENT	29	PBI	0018.0	0018.0	20.00	2.8			
	8800	ATHN	4	S/F	1318.1	1327.6	10.0	42.0			QL=5 ST=2 TYP=3
	2695	PENT	20	GRF	1340.0	1345.0	15.0	1.8	.9		
	2800	OTTA	20	GRF	1440.0	1450.0	20.0	2.0	1.0		
	2800	OTTA	20	GRF	2100.0	2145.0	90.0	2.2	1.1		
	2695	PENT	1	S	2254.0	2257.0	8.0	5.8	2.0		
10	8800	LEAR	4	S/F	0005.6	0008.1	7.0	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0005.8	0008.1	7.2	26.0			QL=6 ST=2 TYP=3
	2695	PENT	4	S/F	0006.0	0008.8	7.0	24.0	10.0		
	2695	PALE	4	S/F	0007.6	0009.1	2.9	21.0			QL=6 ST=2 TYP=3
	2695	PENT	1	S	0014.0	0014.1	1.0	4.2	2.0		
	8800	LEAR	8	S	0838.5	0840.1	1.6	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0838.8	0840.1	1.5	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	20	GRF	0848.3	0901.8	53.0	39.0			QL=6 ST=2 TYP=2
	8800	LEAR	20	GRF	0849.0	0851.8	2.8	21.0			QL=6 ST=2 TYP=2
	2800	OTTA	260	FAL	1430.0	1505.0	35.0	-2.6	-1.3		
	2800	OTTA	260	FAL	1625.0	1650.0	25.0	-2.2	-1.1		
11	2800	OTTA	1	S	1635.0	1635.7	2.0	2.2	1.1		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MARCH 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
11	2695	SGMR	8	S	1816.0	1816.1	.3	13.0			QL=6 ST=2 TYP=3
12	2800	OTTA	21	GRF	1415.0		375.0	4.4	2.2		
	2800	OTTA	45	C	1420.0	1420.5	4.0	41.0	20.5		
	2695	SGMR	4	S/F	1420.1	1420.6	3.5	43.0			QL=6 ST=2 TYP=3
	8800	SGMR	4	S/F	1420.3	1421.8	3.7	24.0			QL=5 ST=2 TYP=3
	8800	ATHN	4	S/F	1420.6	1421.1	4.2	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1420.6	1421.1	4.2	44.0			QL=6 ST=2 TYP=3
	2800	OTTA	29	PBI	1424.0	1424.0	6.0	4.2	1.4		
	2695	LEAR	4	S/F	2305.3	2306.6	3.5	13.0			QL=6 ST=2 TYP=3
13	2800	OTTA	20	GRF	1834.0	1836.4	12.0	5.4	2.0		
14	2800	OTTA	27	RF	1750.0		190.0	2.0	1.8		
	2800	OTTA	24	R	1750.0	1806.0	16.0	2.0	.7		
	2800	OTTA	24P	R	1806.0		144.0	2.0			
	2800	OTTA	26	FAL	2030.0	2100.0	30.0	-2.0	-1.0		
15	2800	OTTA	1	S	1256.0	1257.1	7.0	7.4	2.4		
	2800	OTTA	20	GRF	1645.0	1920.0	300.0	5.6	2.8		
16	8800	LEAR	4	S/F	0347.0	0348.6	2.8	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0348.3	0348.6	1.5	4.0			QL=6 ST=2 TYP=3
	2800	OTTA	240	R	1635.0	1655.0	20.0	1.8	1.0		
	2800	OTTA	1	S	2050.2	2050.5	1.2	5.0			
	2800	OTTA	21	GRF	2130.0	2215.0	210.00	7.8			
	2800	OTTA	8	S	2137.5	2137.5	.1	3.0			
	2800	OTTA	46F	C	2159.7	2200.0	5.0	30.0	10.0		
	2695	SGMR	8	S	2159.8	2200.1	.5	29.0			QL=6 ST=2 TYP=3
	8800	SGMR	4	S/F	2159.8	2201.3	2.2	30.0			QL=6 ST=2 TYP=3
	8800	PALE	4	S/F	2159.8	2201.5	3.0	46.0			QL=6 ST=2 TYP=3
17	2695	LEAR	4	S/F	0223.1	0224.6	5.4	21.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0223.1	0224.6	12.9	73.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	0723.1	0724.3	4.4	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0723.3	0725.6	4.2	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0723.5	0724.0	3.3	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0723.8	0725.5	2.0	16.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0731.1	0731.5	.7	5.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0900.5	0900.6	12.0	83.0			QL=6 ST=3 TYP=5
	8800	LEAR	47	GB	0900.5	0900.8	7.8	110.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	0900.5	0901.6	7.3	34.0			QL=6 ST=3 TYP=3
	2695	LEAR	4	S/F	0900.5	0902.3	6.6	40.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1055.0	1100.3	10.1	4.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1234.3	1234.5	1.0	12.6	6.5		
	2800	OTTA	21	GRF	1332.0	1520.0	200.0	7.6	4.0		
	2800	OTTA	46F	C	1333.2	1334.0	5.8	48.0	17.8		
	2695	SGMR	4	S/F	1333.6	1334.6	6.7	48.0			QL=6 ST=3 TYP=3
	8800	SGMR	4	S/F	1334.1	1334.6	4.9	47.0			QL=6 ST=3 TYP=3
	2800	OTTA	29	PBI	1339.0	1339.0	16.0	5.6	2.6		
	2800	OTTA	240	R	1815.0	1930.0	75.0	3.8	1.9		
	2800	OTTA	46F	C	2011.0	2012.3	7.0	200.0	59.0		
	2695	SGMR	47	GB	2011.1	2012.1	9.7	270.0			QL=6 ST=3 TYP=5
	8800	SGMR	47	GB	2011.1	2012.5	10.0	219.0			QL=6 ST=3 TYP=5
	8800	PALE	47	GB	2011.6	2012.6	6.0	219.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	2012.8	2013.3		370.0			QL=6 ST=1 TYP=5
	2800	OTTA	29	PBI	2018.0	2018.0	130.0	11.8	5.9		
	2695	PENT	240	R	2300.0	2355.0	55.0	4.0	2.2		
18	2695	PENT	3	S	0049.8	0051.3	5.0	22.6	7.6		
	8800	LEAR	4	S/F	0153.3	0153.8	12.3	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0153.6	0158.1	5.5	7.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0438.0	0440.5	4.5	210.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	0438.1	0440.6	4.5	51.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0439.6	0440.1	2.2	130.0			QL=6 ST=2 TYP=5
	2695	LEAR	8	S	0440.0	0440.1	.8	22.0			QL=6 ST=2 TYP=3
	2695	ATHN	47	GB	0806.6	0807.8	9.0	86.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0806.6	0807.8	7.5	80.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	0806.6	0810.6	9.0	27.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0810.1	0810.3	3.4	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1330.0	1510.0	165.0	3.6	1.8		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MARCH 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
18	2800	OTTA		1407.0		12.0D	5.0			
	2800	OTTA	1 S	1548.0	1550.0	4.0	1.6	1.2		
	2800	OTTA	21 GRF	1815.0	1910.0	105.0	4.8	2.2		
	2800	OTTA	2 S/F	1852.0	1852.5	1.5	8.8	4.0		
19	2800	OTTA	20 GRF	1200.0	1300.0	110.0	4.6	3.2		
	2800	OTTA	20 GRF	1420.0	1515.0	90.0	2.4	1.4		
	2800	OTTA	240AR	1637.0	1700.0	23.0	2.0	1.0		
	2800	OTTA	8 S	1637.8	1638.0	.8	1.6	.8		
20	8800	LEAR	8 S	0722.8	0723.3	.5	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0722.8	0723.3	.5	6.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0731.1	0731.3	.5	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	2 S/F	1712.8	1713.5	1.0	3.4	1.2		
21	8800	LEAR	8 S	0226.8	0227.0	.5	9.0			QL=5 ST=2 TYP=3
	2695	LEAR	8 S	0226.8	0227.0	.3	7.0			QL=5 ST=2 TYP=3
	2695	LEAR	8 S	0310.1	0311.1	2.0	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0310.1	0311.1	1.2	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1527.0	1529.0	25.0	5.0	2.0		
	2800	OTTA	32 ABS	1605.0	1715.0	115.0	-2.6	-1.3		
	2800	OTTA	1 S	2016.5	2017.0	1.0	1.6	.8		
	2800	OTTA	21 GRF	2105.0	2130.0	45.0	2.0	1.0		
	2800	OTTA	1 S	2122.8	2124.7	3.0	4.6	2.0		
	8800	LEAR	8 S	2310.3	2310.8	1.0	16.0			QL=5 ST=2 TYP=3
	2695	LEAR	8 S	2310.3	2310.8	1.0	6.0			QL=5 ST=2 TYP=3
22	8800	LEAR	4 S/F	0245.1	0245.8	2.7	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	2000.0	2025.0	120.0	2.4	1.6		
23	2800	OTTA	1 S	1852.0	1852.5	1.5	7.0	1.8		
	2695	SGMR	8 S	1852.3	1852.6	1.0	30.0			QL=6 ST=2 TYP=3
	2695	PENT	20 GRF	2255.0	2330.0	85.0	2.2	1.1		
24	2800	OTTA	20 GRF	1730.0	1733.0	40.0	2.8	1.0		
25	2800	OTTA	240 R	1320.0	1330.0	10.0	2.0	.8		
	2800	OTTA	21 GRF	1415.0	1445.0	260.0	6.8	2.3		
	2800	OTTA	4 S/F	1433.0	1437.0	9.5	10.0	3.4		
	2695	ATHN	4 S/F	1435.1	1437.3	5.0	11.0			QL=6 ST=2 TYP=3
26	2695	LEAR	4 S/F	0600.5	0606.3	6.3	16.0			QL=6 ST=2 TYP=3
	2695	ATHN	8 S	0602.6	0603.3	1.0	11.0			QL=5 ST=2 TYP=3
	2800	OTTA	20 GRF	1445.0	1630.0	195.0	3.0	1.8		
27	2800	OTTA	20 GRF	1830.0	1905.0	70.0	1.6	1.0		
28	2800	OTTA	20 GRF	1520.0	1535.0	50.0	2.2	1.1		

Observatories:

BERN = Berne MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill
LEAR = Learmonth ATHN = Athens PALE = Palehua

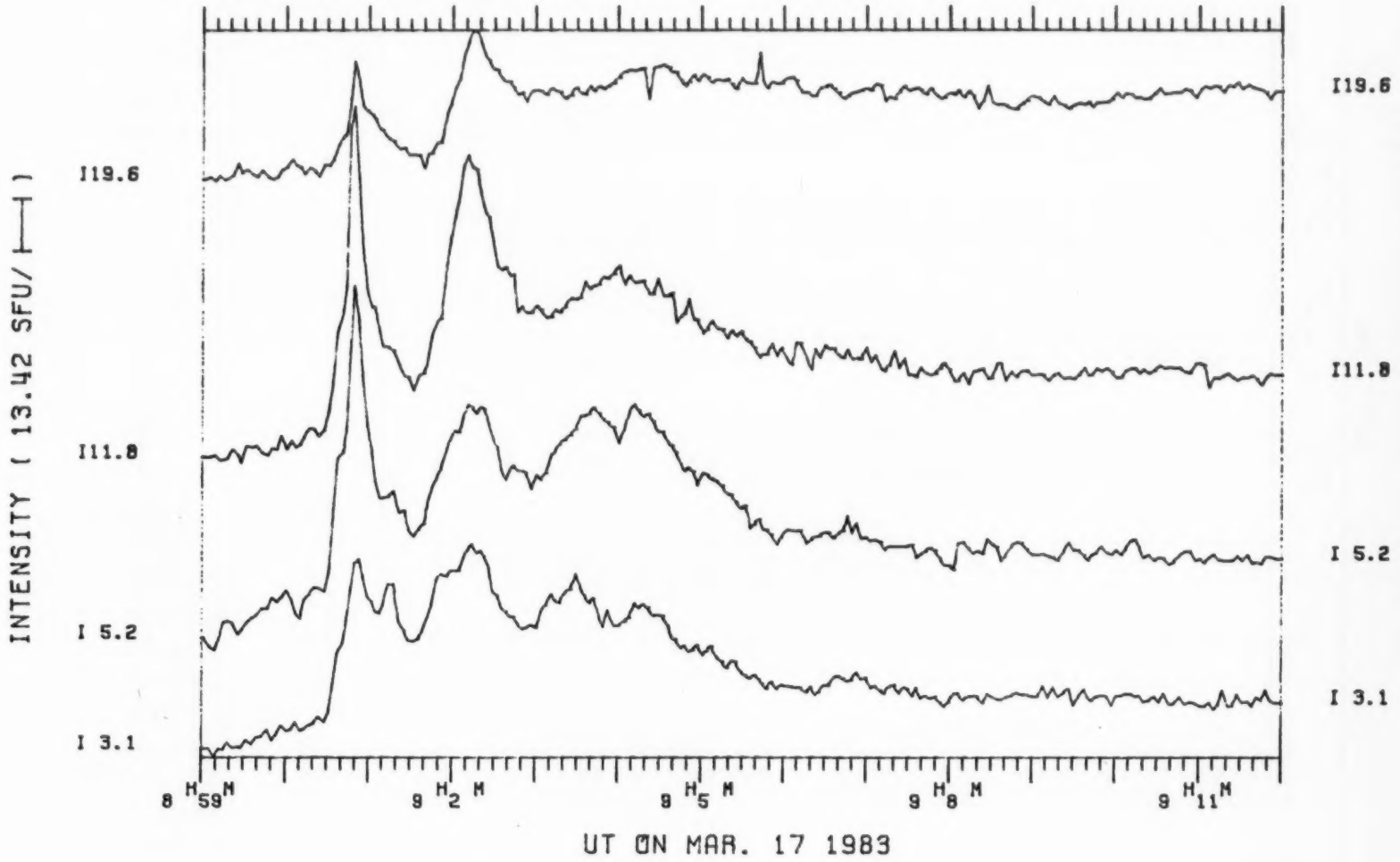
Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset on Noise Storm
44 Noise Storm In Progress
45 Complex
46 Complex F
47 Great Burstise Storm
48 Major
49 Major +

28 Mar 83

INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND

INTEGRATION TIME= 3000 MS



BOULDER GEOMAGNETIC SUBSTORM LOG

March 1983

DATE	ONSET TIME	DIR	COMMENTS
03/01			Field intermittently unsettled.
	1920		Localized substorm vicinity Cape Parry.
03/02			Magnetic conditions 0200-2100 UT.
03/03			Field intermittently active.
	0700	West	
	0855	West	
	1100	West	
	1420	West	
	1540	West	
03/04			Field unsettled all day.
	0625	Center	
	1205	West	Several injections with recovery near 1500 UT.
03/05			Field intermittently active.
	0540	Center	
	1005	West	
	1350		Localized substorm vicinity Anchorage.
	1435	West	
03/06			Field slightly unsettled.
	0820	West	
	1040	West	Multiple injections with recovery near 1400 UT.
	1410	West	
03/07			Field intermittently unsettled with no significant substorm activity.
0308			Field intermittently unsettled.
	1235	West	
03/09			Field intermittently unsettled with no significant substorm activity.
03/10			Field slightly unsettled.
03/11			Field unsettled after 0900 UT.
	0935	West	Weak substorm.
	1225	West	
03/12			Magstorm conditions after 1000 UT.
03/13			Field intermittently unsettled.
	0710		Weak onset, numerous injections with recovery near 1300 UT.
03/14			Field unsettled all day.
	0705	West	Moderate substorm with several injections
	0935	West	Weak substorm.
	1150		Localized substorm Anchorage to College.
03/15			Field intermittently unsettled.
	0630	East	
	0955	West	Weak substorm.
	1020	West	Weak substorm.
	1250	West	Weak substorm.
03/16			Field intermittently unsettled.
	0405	East	Weak substorm.
	1145	West	Moderate substorm with recovery near 1400 UT.
03/17			Field intermittently unsettled.
	0955	West	Weak substorm.
	1020	West	Injection into existing substorm.
03/18			Field intermittently unsettled.
	1555	West	Slow onset, recovery near 1900 UT.
03/19			Field intermittently active.
	0620	East	
	0925		Localized substorm vicinity Anchorage.
	1320	West	Moderate substorm.
03/20			Field unsettled all day.
	0405	East	
	1420	West	
	1520	West	
03/21			Field unsettled all day.
	0035		Moderate positive bay D component Boulder-Tucson.
	0455	East	Weak substorm.
	0930	West	Weak substorm.
	1020	West	Weak substorm.
	1115	West	Weak substorm.
03/22			Field intermittently unsettled.
	0300	East	Weak substorm.
	0830	West	Several minor injections.
	1410	West	Slow onset.
03/23			Field intermittently unsettled.
	0535	West	
	0655	West	
03/24			Field intermittently unsettled.
	0850		Weak substorm Ft. Yukon to College.
03/25			Magstorm conditions 0300-2030 UT.
	2225		Positive impulse H component mid-latitude stations.
03/26			Field unsettled through 0600 UT, then slightly unsettled balance of day.
03/27			Field slightly unsettled.
03/28			Field intermittently active.
	0420	East	Weak substorm.
	0915	West	
	1205	West	Initial onset at Anchorage, numerous injections with recovery near 1900 UT.
03/29			Field strongly unsettled.
	0300		Positive bays H and D components at Boulder and Tucson.
	0630	East	
	1125		Localized substorm College to Anchorage.
	1505	West	
	1805		Localized substorm College to Anchorage.
03/30			Field strongly unsettled.
	0330	East	
	0700	West	
	0945		Localized substorm vicinity College.
	1020	West	
	1335	West	Several injections with recovery near 1730 UT.
03/31			Field strongly unsettled.
	0400	East	
	0850	East	
	0915	West	
	1205		Weak substorm.
	1255		Localized substorm College to Anchorage.

INFERRED IP MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2024	AUG 26	-	-	-	TA	-	TA	-	-	-	TA	-	-	-	-	TA	-	-	TA	-	-	-	-	-	-	-	-	-	-
2025	SEP 22	-	-	-	-	-	-	-	AT	-	TA	-	-	-	-	TA	-	TA	-	TA	-	AT	-	TA	-	AT	-	TA	-	TA	-	TA	-
2026	OCT 19	AT	-	TA	-	TA	-	-	-	-	TA	-	-	-	-	-	TA	-	-	-	-	-	AT	-	TA	-	-	-	-	-	-	-	-
2027	NOV 15	-	-	-	-	-	AT	-	AT	-	-	-	-	-	-	-	TA	-	-	TA	-	AT	-	-	-	-	AT	-	-
2028	DEC 12	TA	-	-	-	-	-	-	AT	-	AT	-	-	-	-	-	-	AT	-	-	AT	-	TA	-	-	-	-	-	-	-	TA	-	-	-	-
2029	1982 JAN 8	-	-	-	-	-	-	-	-	-	TA	-	TA	-	-	-	-	-	-	-	-	-	-	-	TA	-	-	-	-	AT	-	-	-	-
2030	FEB 4	-	-	-	-	-	TA	-	TA	-	TA	-	TA	-	-	-	-	TA	-	-	-	-	-	-	-	-	TA	-	-	-	-	TA	-
2031	MAR 3	-	-	-	-	-	-	-	-	-	TA	-	TA	-	-	-	TA	-	TA	-	-	-	-	-	-	TA	-	TA	-	-	-	-	AT	-
2032	MAR 30	-	-	TA	-	-	TA	-	-	-	-	-	-	-	-	-	-	AT	-	TA	-	-	TA	-	-	-	-	-	-	-	-	-	-	-
2033	APR 26	-	-	AT	-	-	-	-	-	-	-	TA	-	TA	-	-	-	-	-	-	-	-	-	-	-	-	AT	-	AT	-	-	-	-	-
2034	MAY 23	-	-	-	-	-	AT	-	-	-	TA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TA	-
2035	JUN 19	-	-	-	-	-	-	-	-	-	-	-	-	TA	-	-	-	-	-	-	-	-	-	TA	-	-	-	-	-	-	-	-	-	-
2036	JUL 16	-	-	-	-	-	-	-	TA	-	-	-	-	-	-	AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2037	AUG 12	-	-	-	-	-	-	-	-	-	-	TA	-	TA	-	TA	-	-	-	TA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2038	SEP 8	TA	-	AT	-	-	-	-	-	-	-	-	-	-	TA	-	-	AT	-	-	-	-	TA	-	-	-	-	-	-	-	-	-	-	-
2039	OCT 5	-	-	AT	-	-	AT	-	-	-	AT	-	TA	-	-	-	-	AT	-	-	TA	-	-	-	TA	-	-	-	-	-	-	-	-	-
2040	NOV 1	AT	-	-	-	-	-	AT	-	-	-	-	AT	-	-	AT	-	-	-	TA	-	-	-	-	-	TA	-	AT	-	-	-	-	-	-
2041	NOV 28	TA	-	-	-	-	-	-	-	AT	-	-	-	TA	-	TA	-	-	-	-	-	-	AT	-	AT	-	-	-	-	-	-	-	-	-	-
2042	DEC 25	-	-	-	AT	-	AT	-	-	-	-	-	-	-	-	-	-	-	TA	-	TA	-	-	-	AT	-	-	-	-	-	-	-	-	-	-
2043	1983 JAN 21	-	-	-	-	-	-	-	-	-	TA	-	-	-	-	TA	-	AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2044	FEB 17	-	-	-	-	-	-	-	-	-	-	TA	-	-	TA	-	-	TA	-	TA	-	TA	-	TA	-	-	-	-	-	-	-	-	-	-	-
2045	MAR 16	-	-	-	AT	-	AT	-	AT	-	-	AT	-	-	-	-	AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

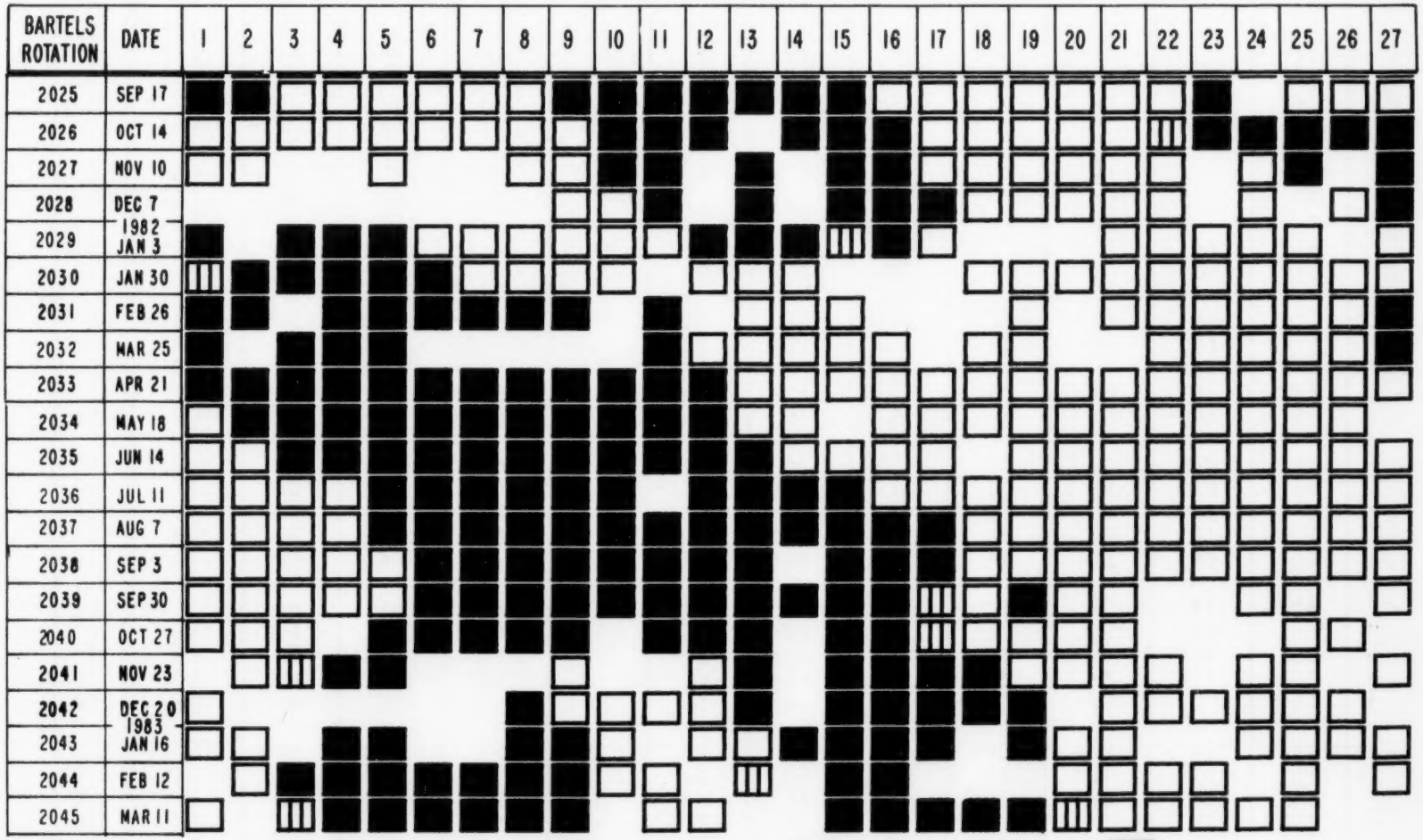
[ ] = definitely towards the sun [ ] = definitely away from the sun

T = towards the sun A = away from the sun * = effect doubtful or not discernible - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

STANFORD MEAN SOLAR MAGNETIC FIELD



POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: □ = FIELD >2μT, ▥ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT

No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

	1982									1983		
day	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
01	.	-6	.	.	49	89	22	-31	42	-9	-81	.
02	.	-6	33	85	19	102	53	-15	.	.	.	.
03	.	23	38	75	19	84	37	-18	.	-89	-8	11
04	-17	43	54	71	52	66	18	-38	10	-81	15	33
05	3	48	80	53	85	68	-6	.	-42	-73	45	38
06	38	16	82	35	105	55	-41	-63	.	-22	.	51
07	60	41	77	29	81	30	-54	-61	-90	-2	.	.
08	57	69	80	42	63	-27	-76	-68	-64	.	54	65
09	24	74	68	54	59	-55	-90	.	-29	53	84	.
10	.	70	54	63	33	-74	-93	-54	-20	46	93	48
11	61	65	50	87	-30	-93	-96	-21	26	37	69	30
12	46	79	58	79	-87	-124	-100	1	29	53	.	.
13	.	87	.	43	-118	-125	-70	19	43	84	16	2
14	.	77	78	9	-121	-120	-35	34	28	84	-19	-25
15	86	72	51	-39	-144	-112	-7	37	.	.	-22	-44
16	93	51	-13	-112	-149	.	-1	52	8	39	-104	-62
17	71	38	-51	-164	-141	-49	4	.	57	10	-102	-27
18	46	27	-93	-193	-124	-28	-43	.	.	.	-67	-19
19	28	-15	-184	-201	-93	-14	55	.	64	-87	-37	-5
20	-6	-57	-237	-189	-59	12	33	22	32	-119	-7	.
21	-38	-68	-225	.	-32	40	.	33	.	.	24	19
22	-78	-93	-170	-128	-16	44	.	.	.	.	27	15
23	-113	-132	-123	-71	-12	26	17	.	.	-25	.	.
24	-107	-158	-69	-29	5	10	45	12	.	-3	-1	.
25	-93	-151	-56	-5	32	8	.	-1	.	31	.	-23
26	-104	-118	-40	12	39	18	54	-31	.	.	-49	-34
27	-117	-26	11	28	47	36	55	-58	-31	31	-66	-42
28	-122	-26	37	38	46	72	34	.	6	3	.	-17
29	-77	-10	46	48	25	57	20	.	42	-14		-20
30	-26	19	59	61	39	52	.	.	59	-51		1
31		46		53	64		-11		35	-91		18

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

SGD 464 Part I (Prompt)

FEBRUARY 1983 DATA

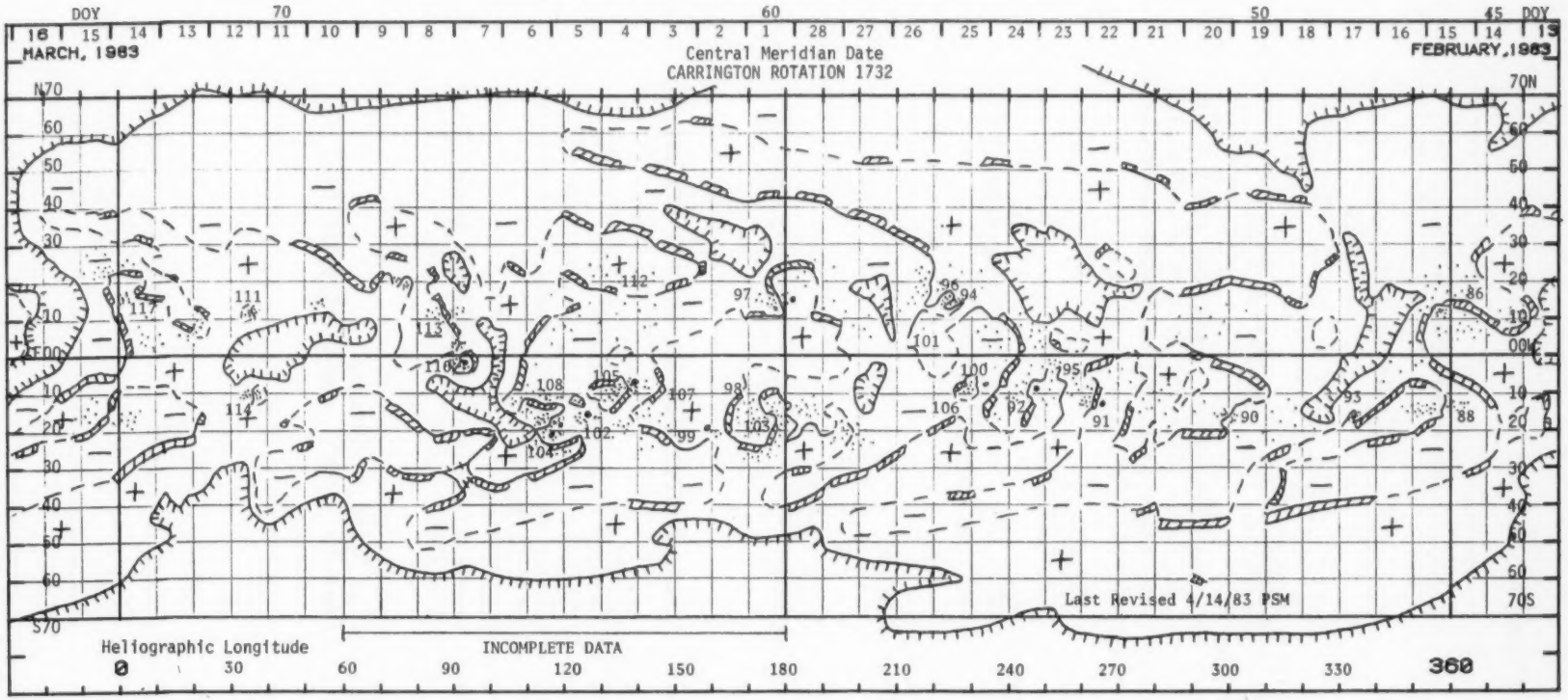
Contents

	Page
Daily Solar Activity Centers	
H-alpha, Solar Magnetic Field, and Helium 10830A Synoptic Charts	34-37
Magnetograms, H-alpha Filtergrams, Sunspots, and Corona	38-65
Regions of Solar Activity (Data not available currently.)	
Daily Calcium Plage Index (Data not available currently.)	
Regions of Sunspot Activity	66-74
Sudden Ionospheric Disturbances	75-77
Spacecraft Observations	
Pioneer XII Interplanetary Magnetic Field Magnitudes (Data not available at time of publication.)	
Solar Radio Emission	
Spectral Observations	78-82
Cosmic Rays	
Neutron Monitors Daily Values	83
Chart of Variations	84-86
Geomagnetic Indices	
Geomagnetic Activity Indices (Kp, Ap, Cp, Km, Am, aa, Kn, An, Ks, As)	87
Daily Average Indices Ap	88
Chart of Kp by Bartels 27-day Rotation	89
Chart of Dst by Bartels 27-day Rotation (See page 96)	
Hourly Equatorial Dst Values (Provisional) (Data not available at time of publication.)	
Principal Magnetic Storms	90
Sudden Commencements and Solar Flare Effects (Data not available at time of publication.)	
Radio Propagation Indices	
Quality Indices on Paths to Germany	91
Transmission Frequency Ranges - North Atlantic Path	92-93

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

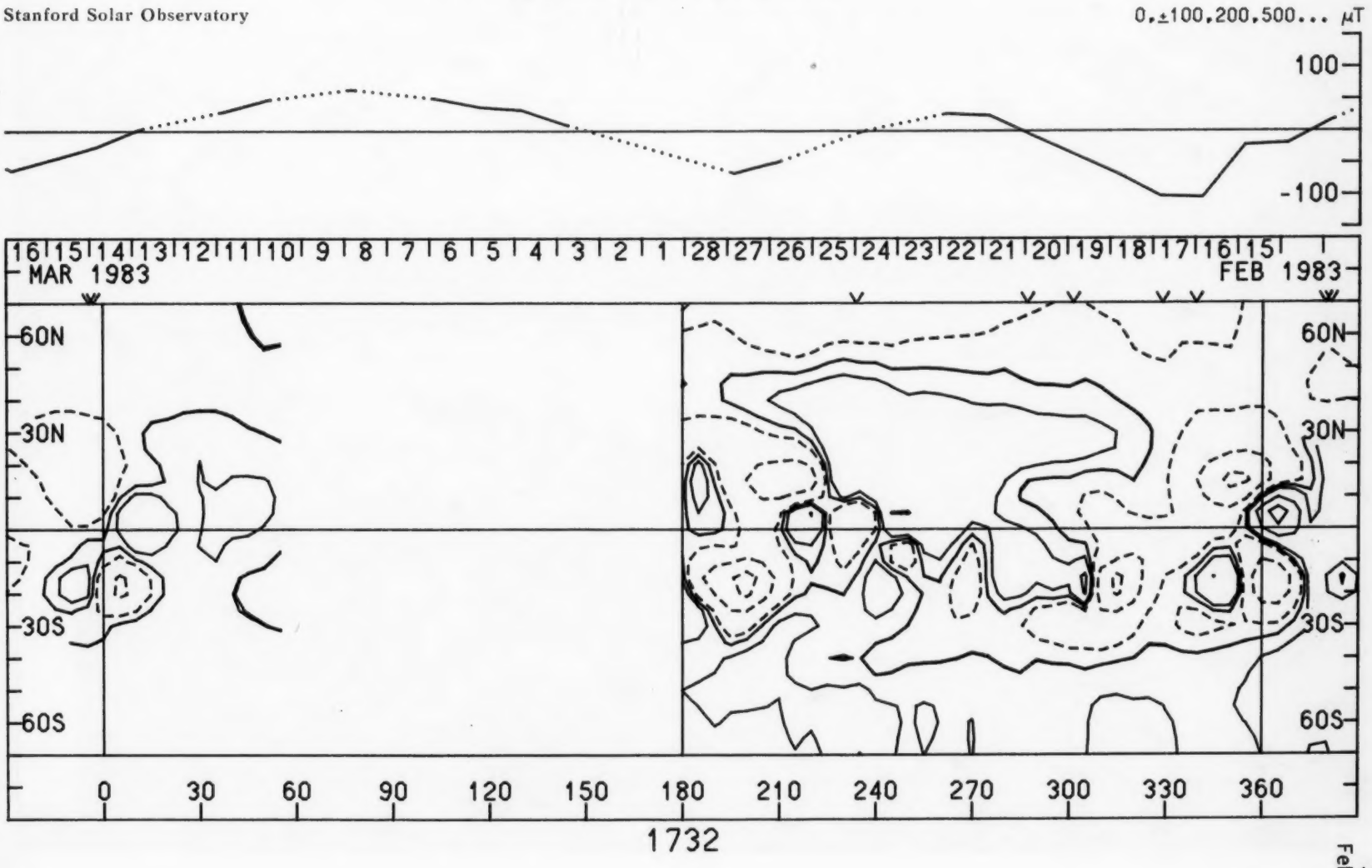
Hα SYNOPTIC CHART

CARRINGTON ROTATION 1732 (PRELIMINARY)

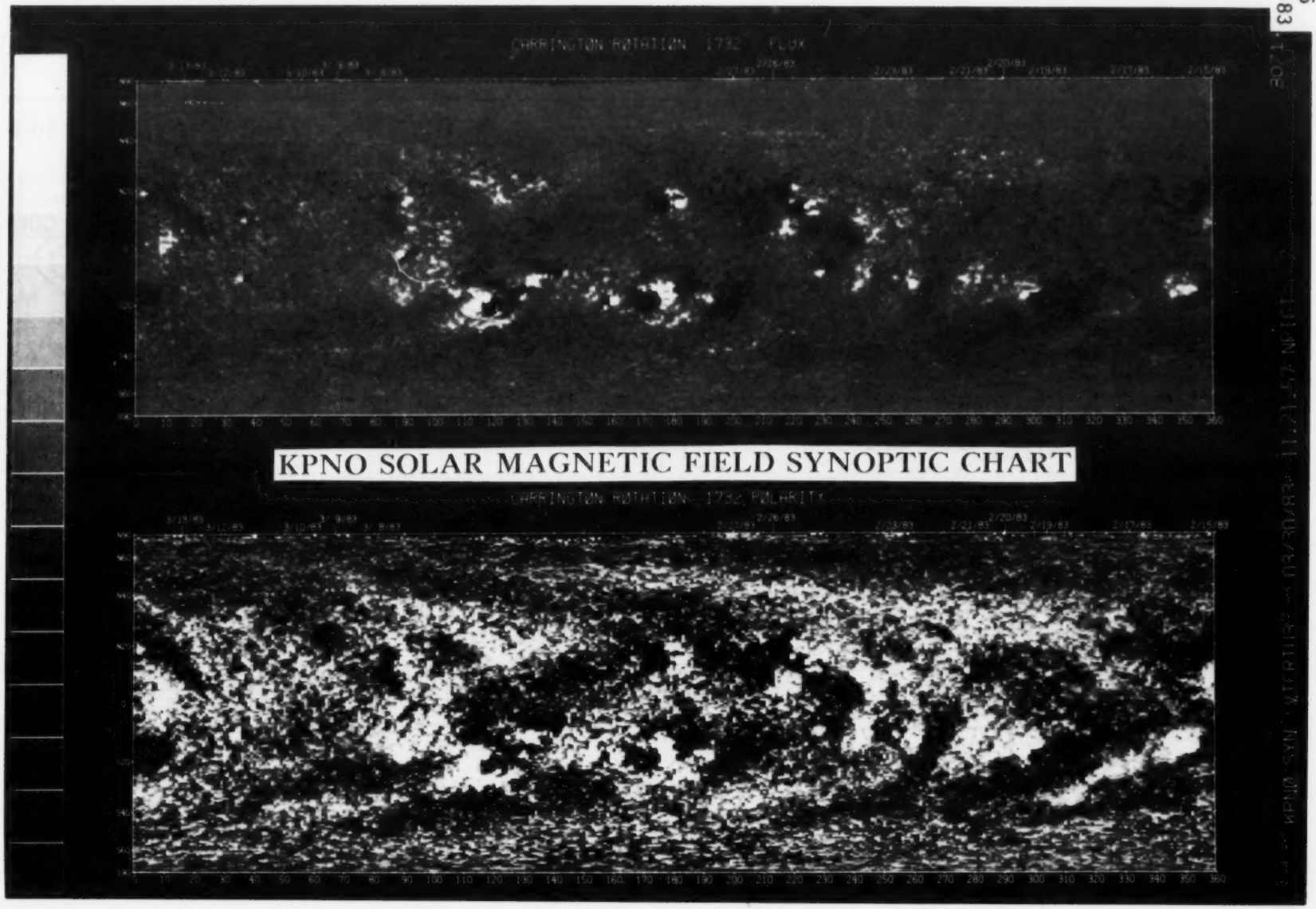


SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION 1732

Stanford Solar Observatory



35
Feb 83

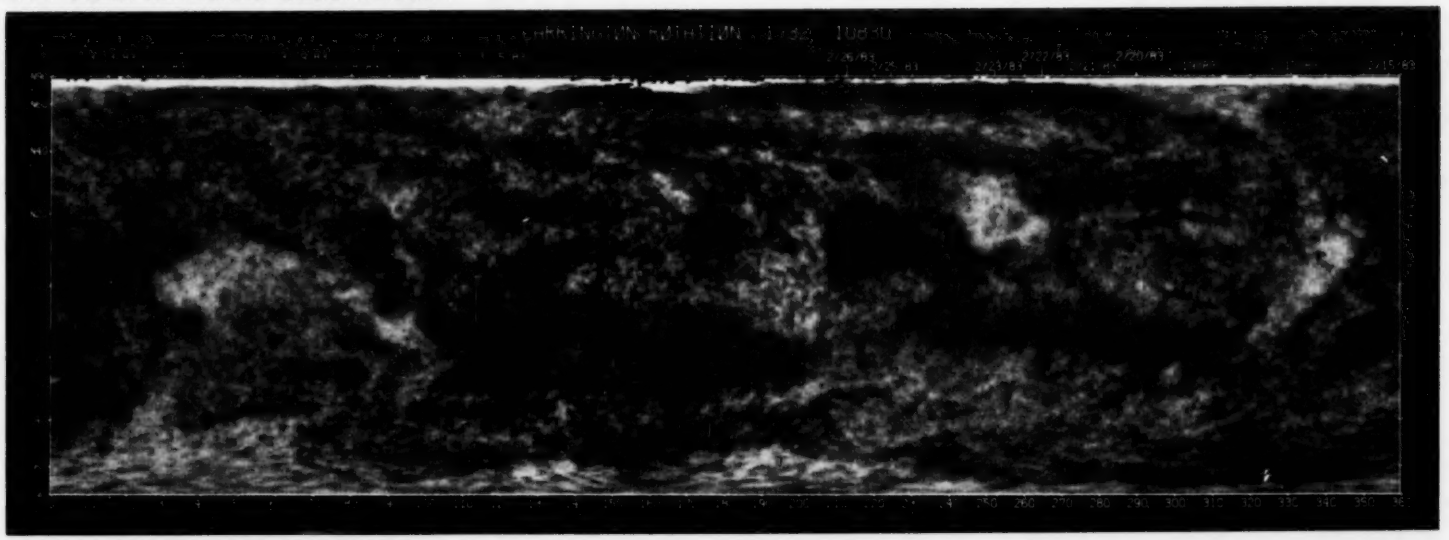


KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

HELIUM 10830Å SYNOPTIC MAPS

CARRINGTON ROTATION 1732

KITT PEAK NATIONAL OBSERVATORY

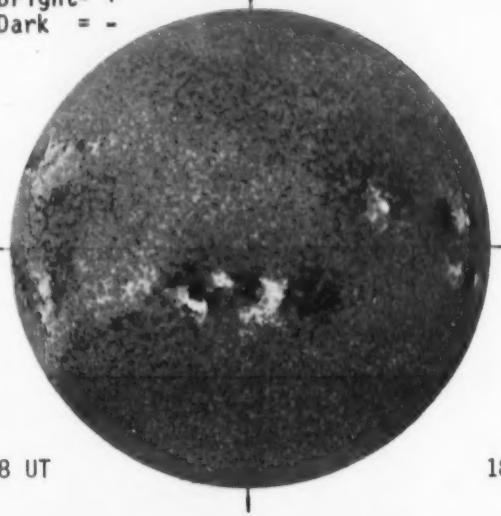


F E B R U A R Y 01, 1 9 8 3 (P=-11.98, B_o=-6.01, L_o= 191.13)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



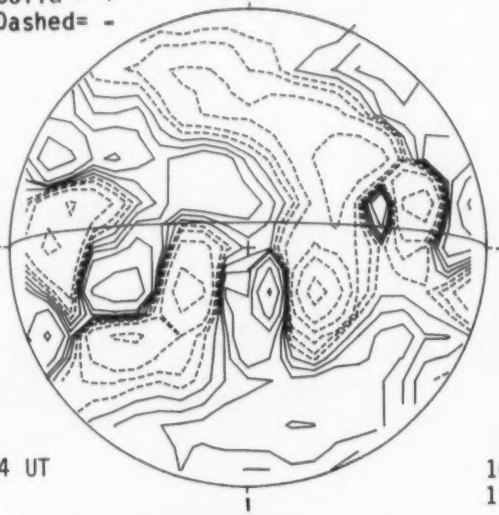
E

1718 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -



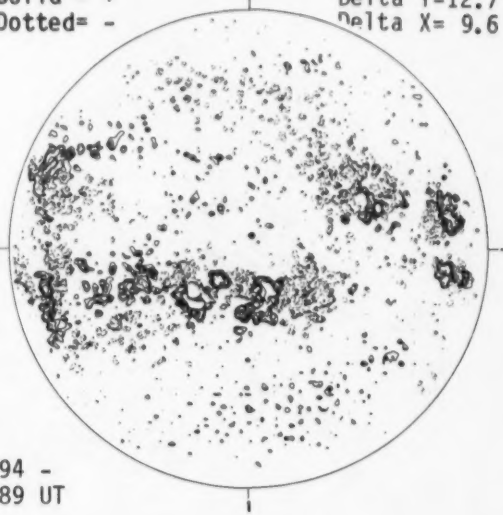
1834 UT

MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

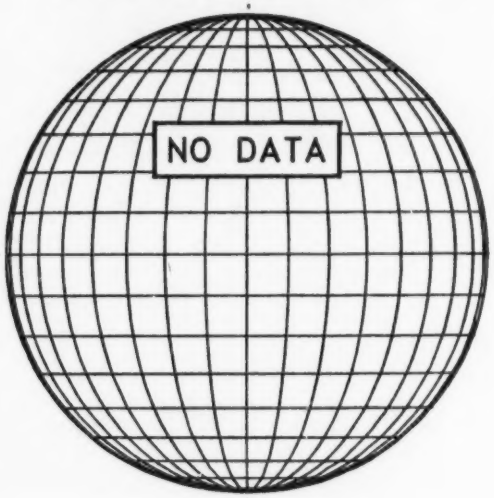
Delta Y=12.7
Delta X= 9.6



W

16.94 -
17.89 UT

SACRAMENTO PEAK H-ALPHA



E

Sp

BOULDER SUNSPOTS

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

W

Sp

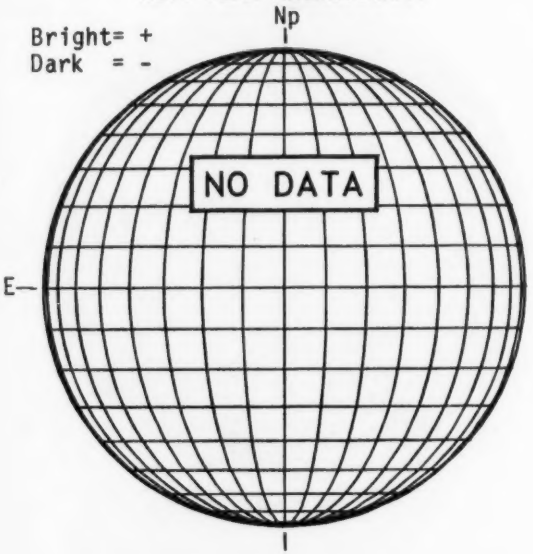
F E B R U A R Y 02, 1 9 8 3 (P=-12.39, B_o=-6.08, L_o= 177.96)

Sp Sp Sp

F E B R U A R Y 02, 1 9 8 3 (P=-12.39, B_o=-6.08, L_o= 177.96)

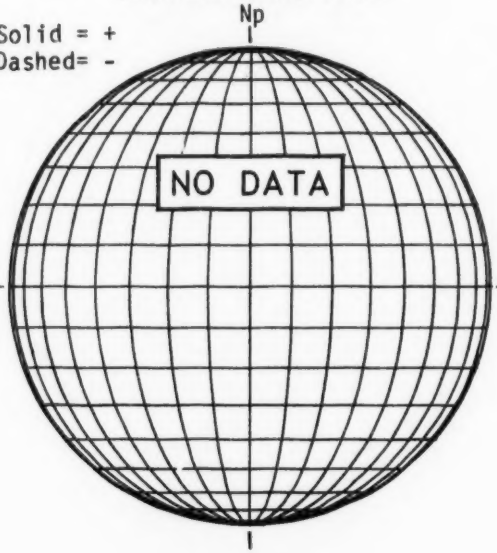
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



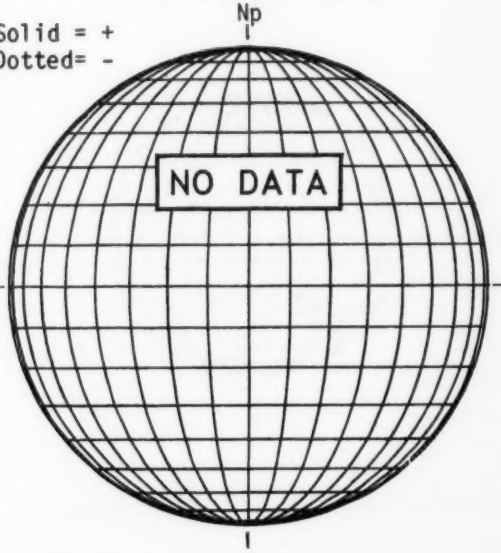
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

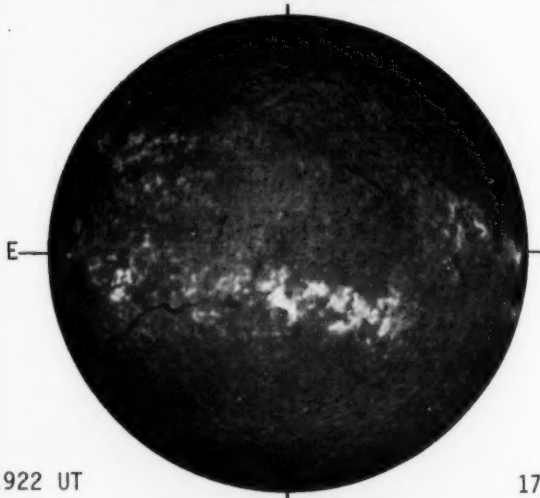


MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

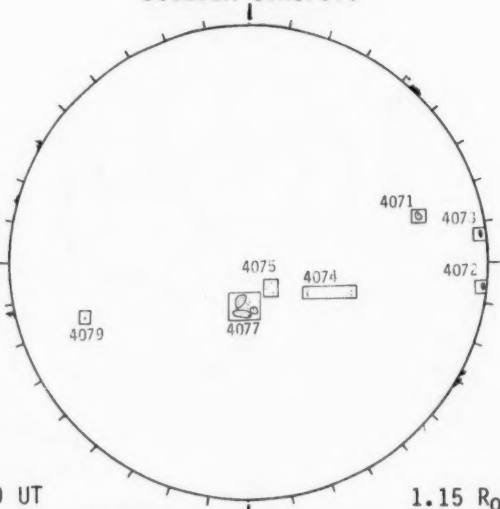


SACRAMENTO PEAK H-ALPHA



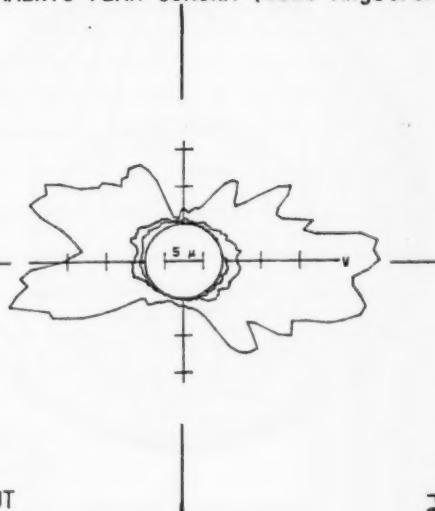
1922 UT

BOULDER SUNSPOTS



1700 UT
1720 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

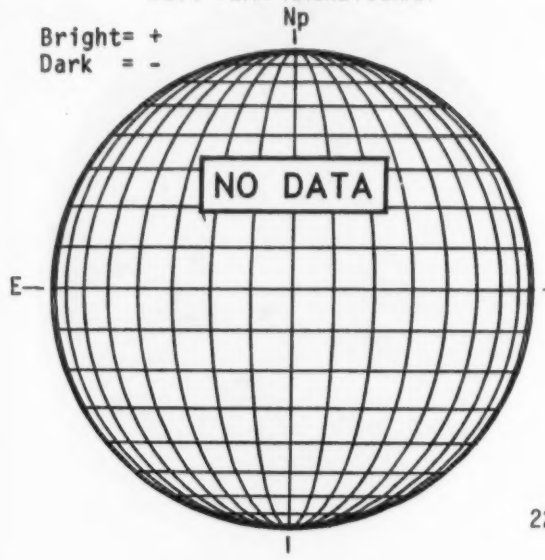


1.15 R_o 2002 UT
1.35 R_o 2008 UT
1.55 R_o 2014 UT

F E B R U A R Y 03, 1 9 8 3 (P=-12.79, B_o=-6.15, L_o= 164.79)

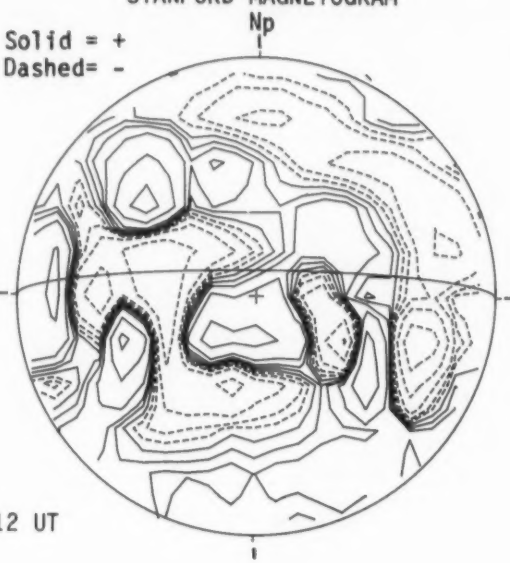
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

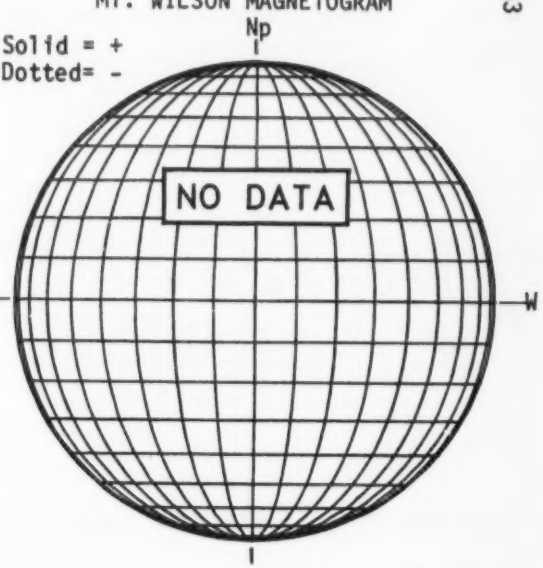
Solid = +
Dashed= -



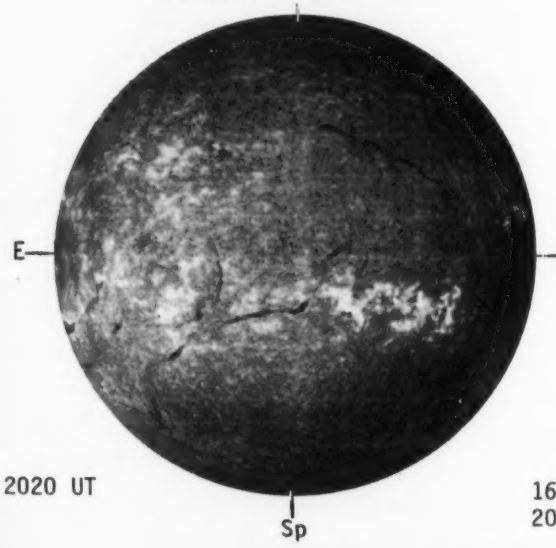
2212 UT

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

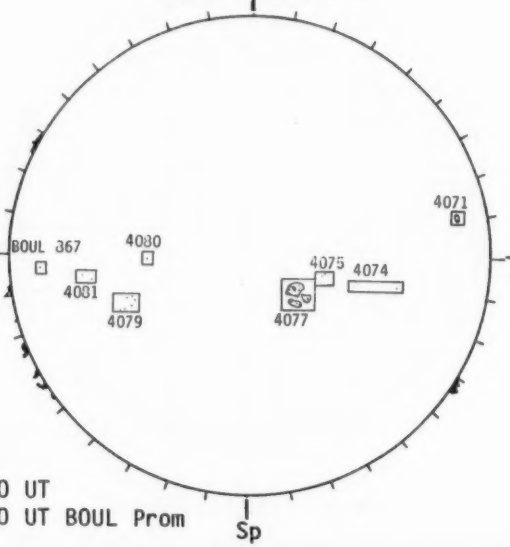


BOULDER H-ALPHA



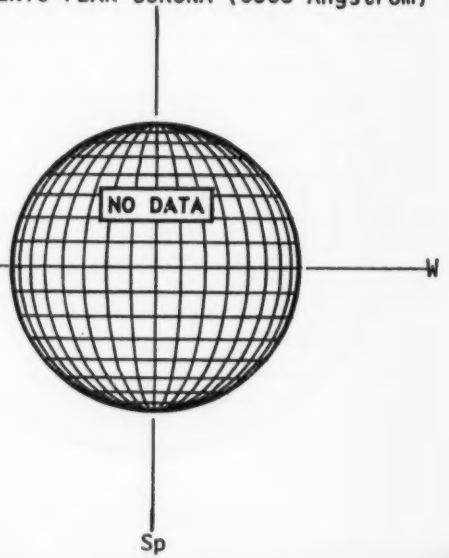
2020 UT

BOULDER SUNSPOTS



1610 UT
2020 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 04, 1 9 8 3 (P=-13.19, B_o=-6.21, L_o= 151.63)

Sp

2020 UT BOUL Prom

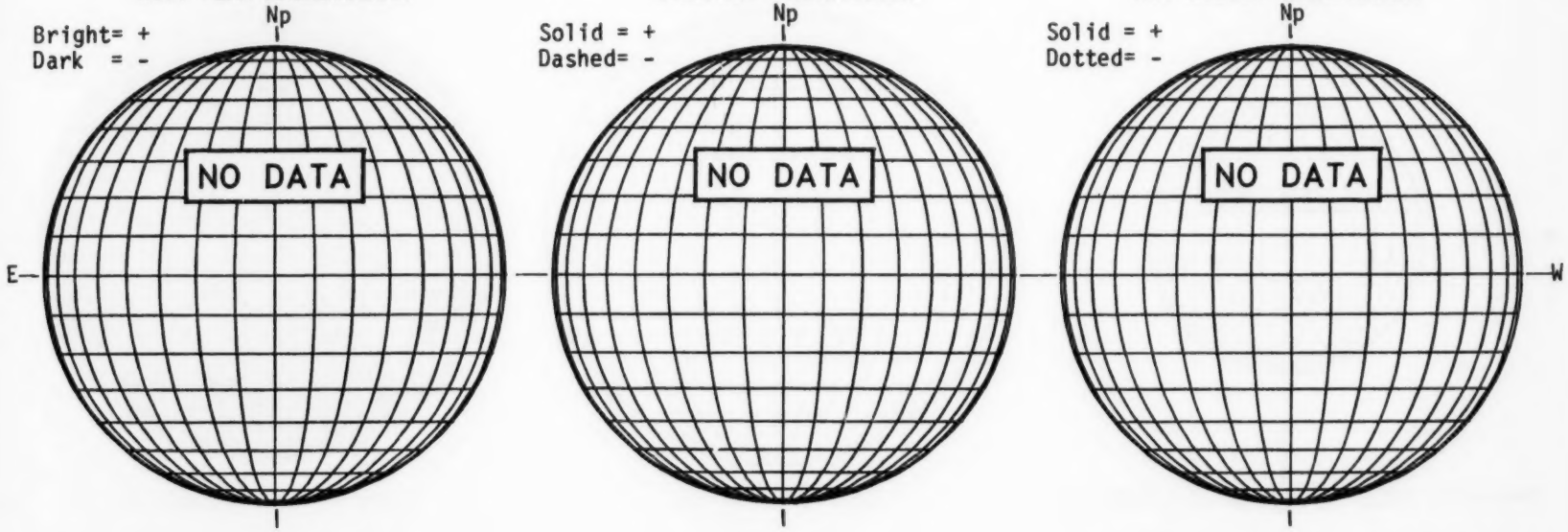
Sp

Sp

F E B R U A R Y 04, 1 9 8 3 (P=-13.19, B_o=-6.21, L_o= 151.63)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



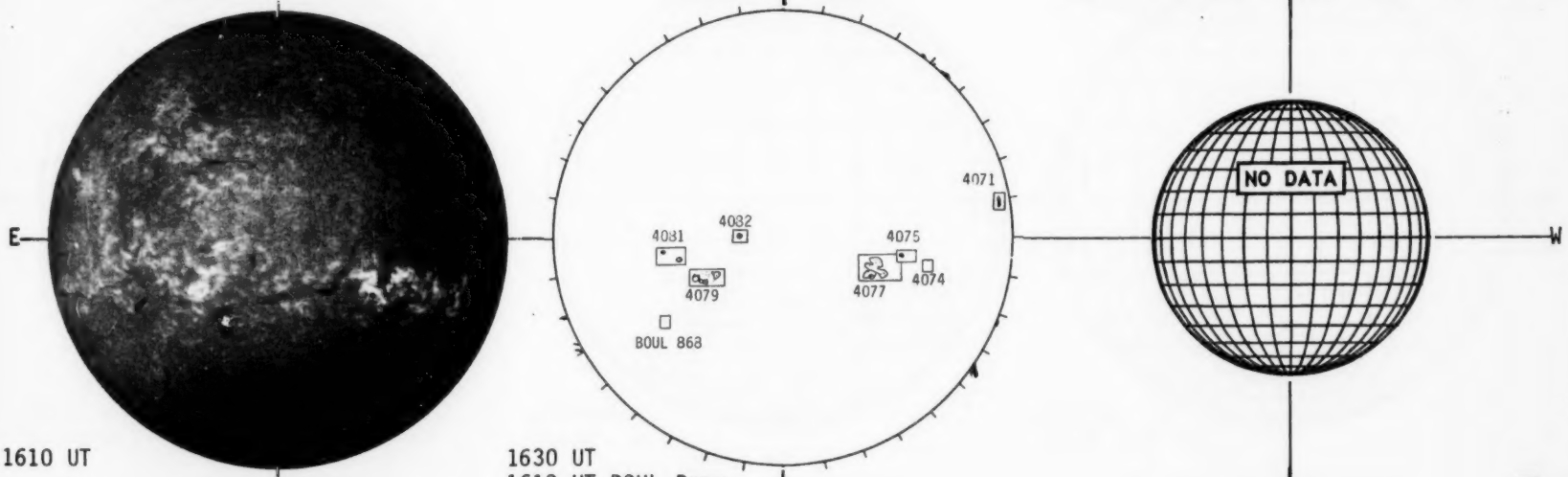
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

BOULDER H-ALPHA



1610 UT

BOULDER SUNSPOTS

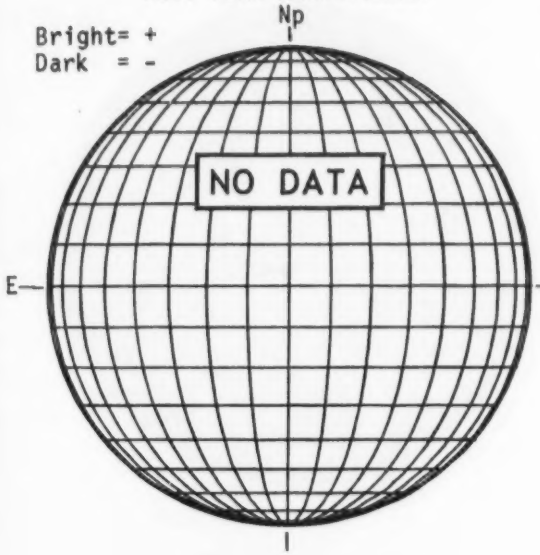
1630 UT
1610 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

F E B R U A R Y 05, 1 9 8 3 (P=-13.58, B_0=-6.28, L_0= 138.46)

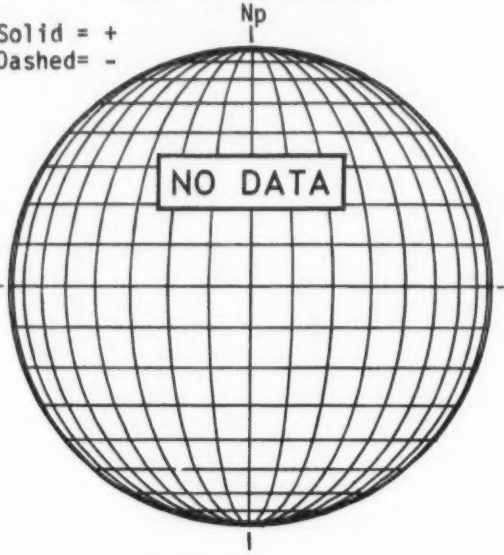
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



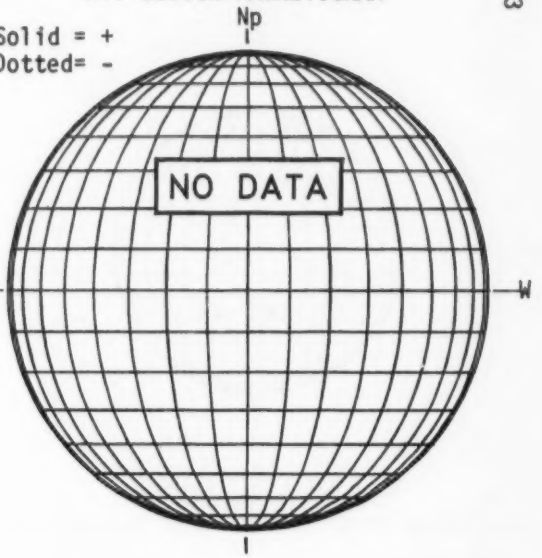
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

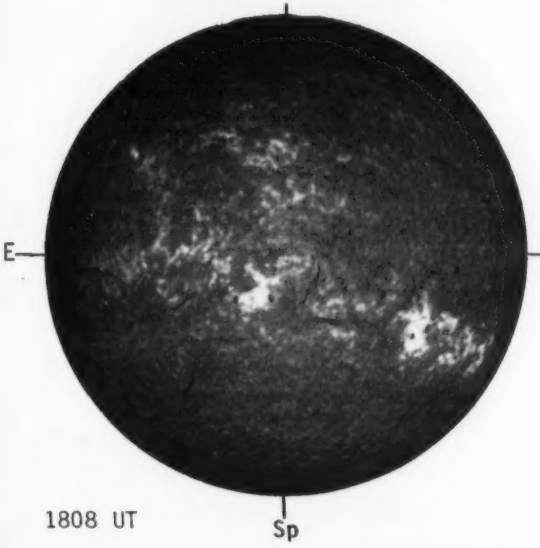


MT. WILSON MAGNETOGRAM

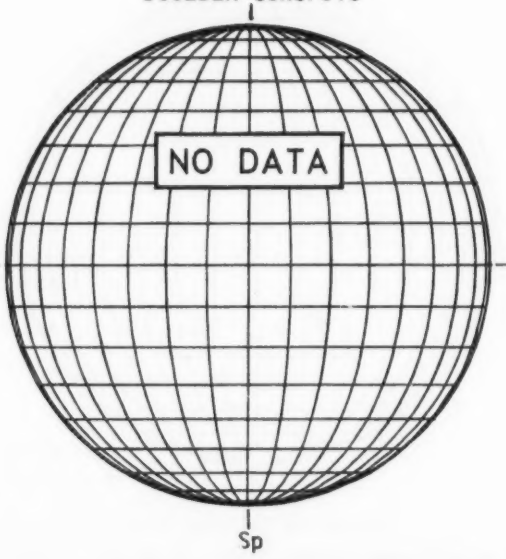
Solid = +
Dotted= -



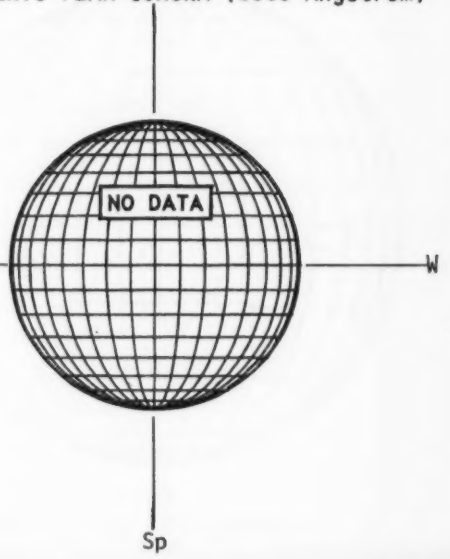
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 06, 1 9 8 3 (P=-13.97, B_0=-6.34, L_0= 125.29)

1808 UT

Sp

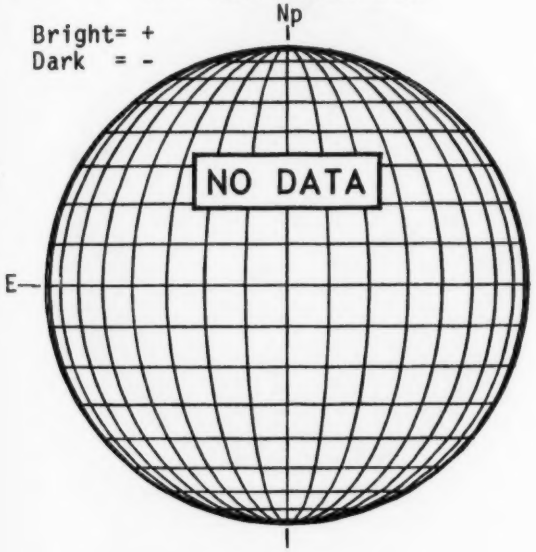
Sp

Sp

F E B R U A R Y 06, 1 9 8 3 (P=-13.97, B_o=-6.34, L_o= 125.29)

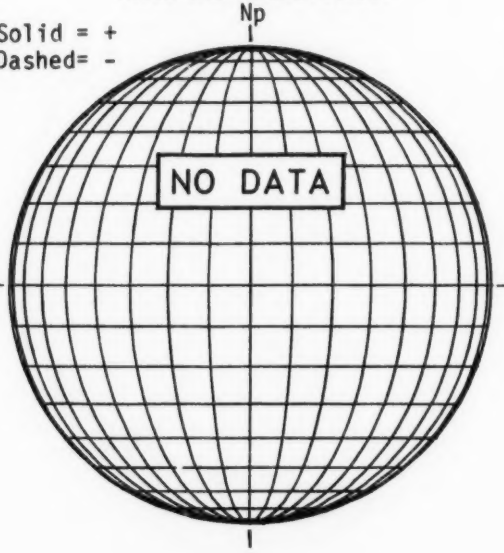
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



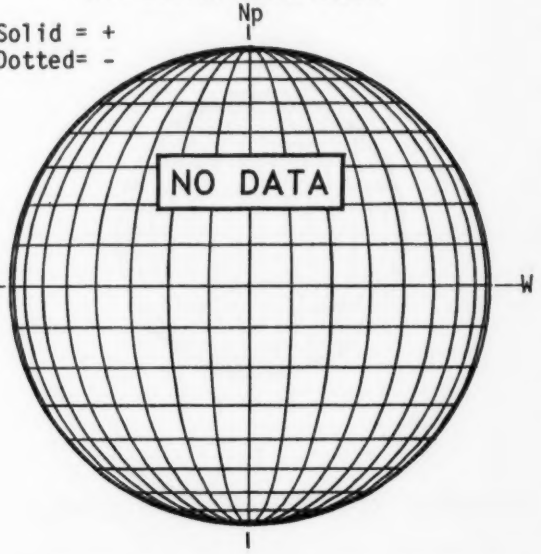
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

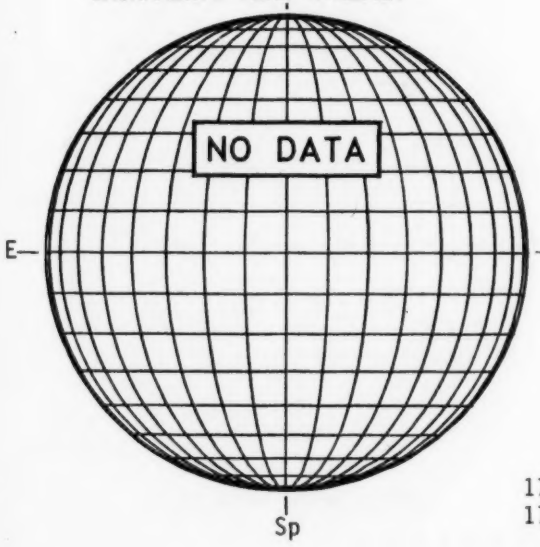


MT. WILSON MAGNETOGRAM

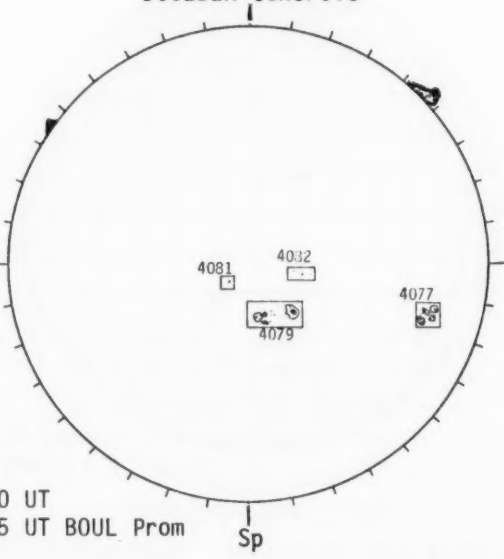
Solid = +
Dotted= -



SACRAMENTO PEAK H-ALPHA

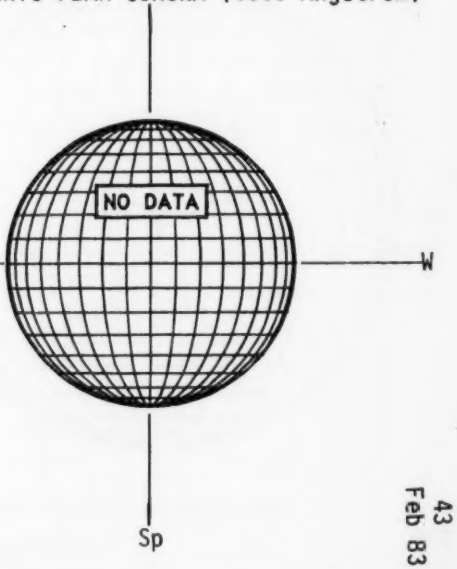


BOULDER SUNSPOTS



1700 UT
1715 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

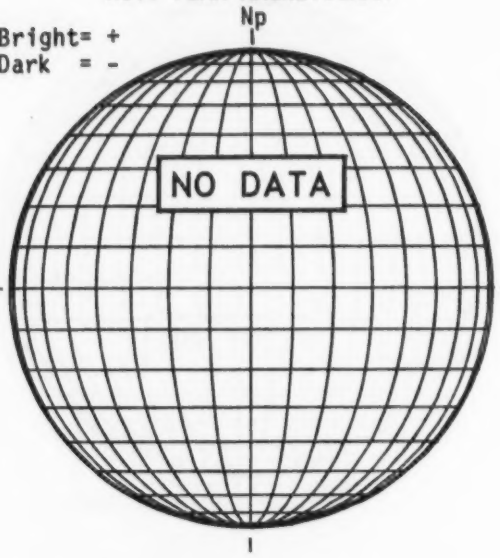


43
Feb 83

F E B R U A R Y 07, 1 9 8 3 (P=-14.36, B_o=-6.40, L_o= 112.13)

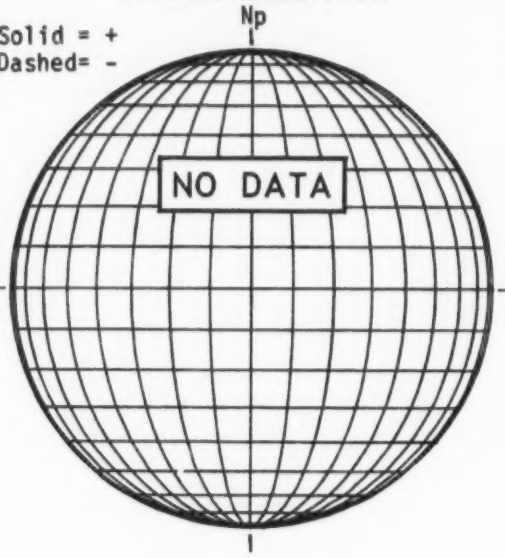
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



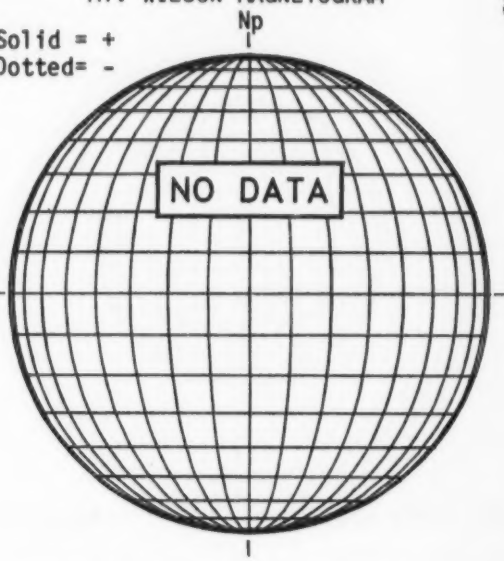
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

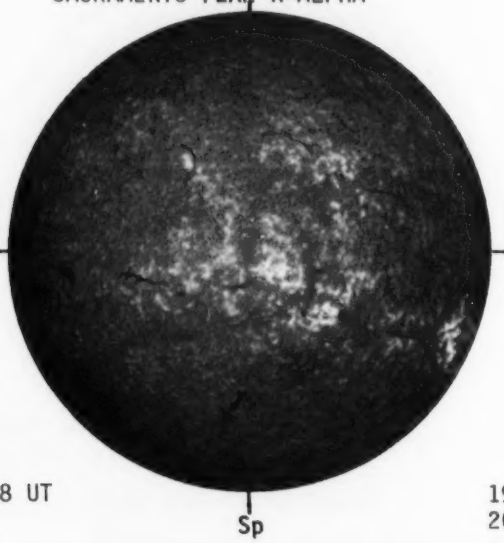


MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

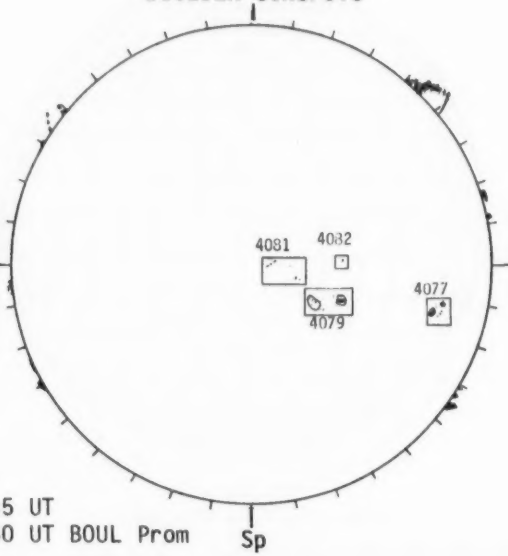


SACRAMENTO PEAK H-ALPHA



1548 UT

BOULDER SUNSPOTS



1935 UT
2030 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

F E B R U A R Y 08, 1 9 8 3 (P=-14.74, B_o=-6.46, L_o= 98.96)

Sp

2030 UT BOUL Prom

Sp

Sp

F E B R U A R Y 08, 1 9 8 3 (P=-14.74, B_o=-6.46, L_o= 98.96)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

NO DATA

E

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

NO DATA

MT. WILSON MAGNETOGRAM

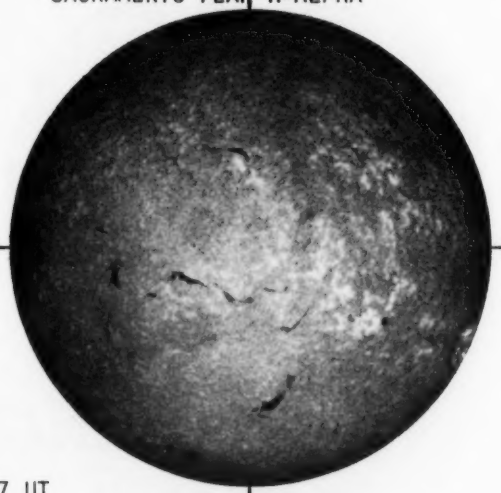
Solid = +
Dotted= -

Np

NO DATA

W

SACRAMENTO PEAK H-ALPHA



E

1537 UT

Sp

BOULDER SUNSPOTS

Np

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

Np

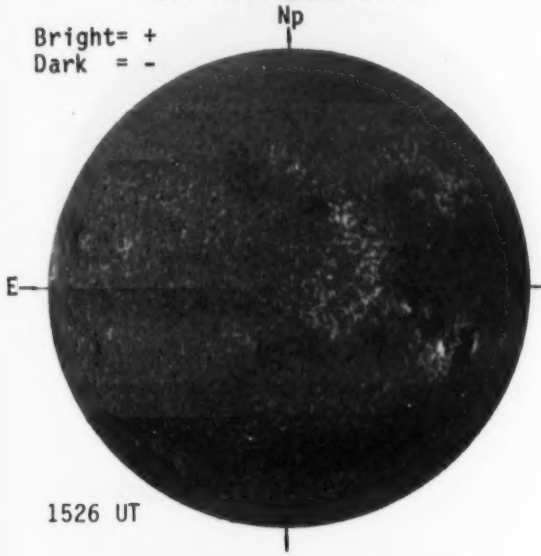
NO DATA

W

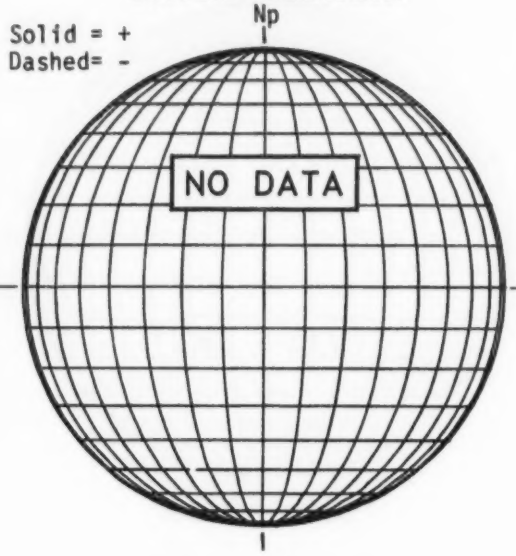
Sp

F E B R U A R Y 09, 1 9 8 3 (P=-15.11, B_o=-6.52, L_o= 85.79)

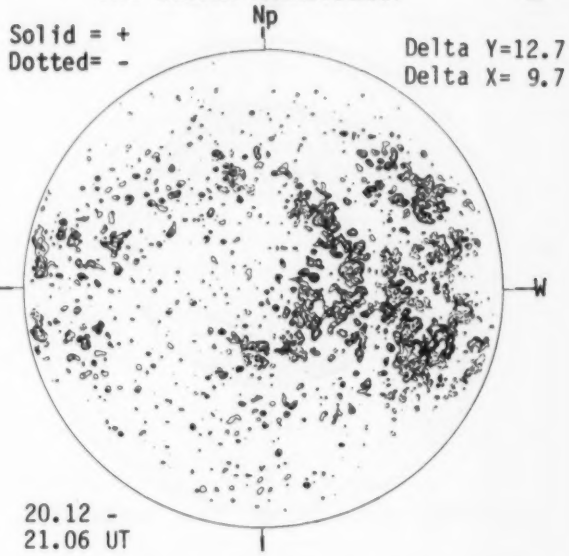
KITT PEAK MAGNETOGRAM



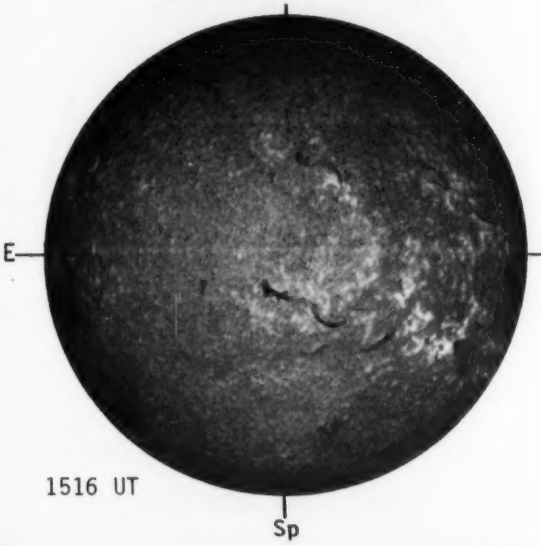
STANFORD MAGNETOGRAM



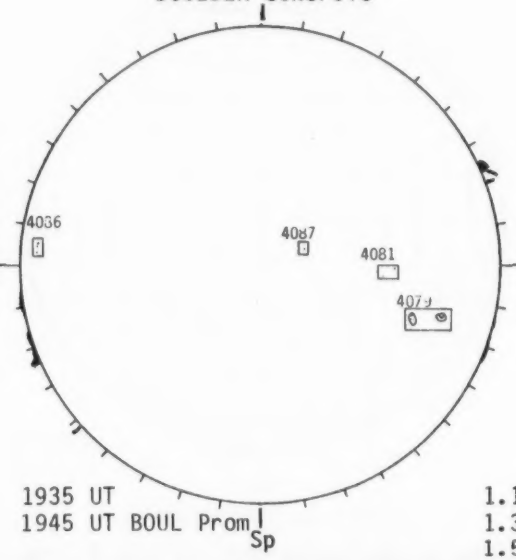
MT. WILSON MAGNETOGRAM



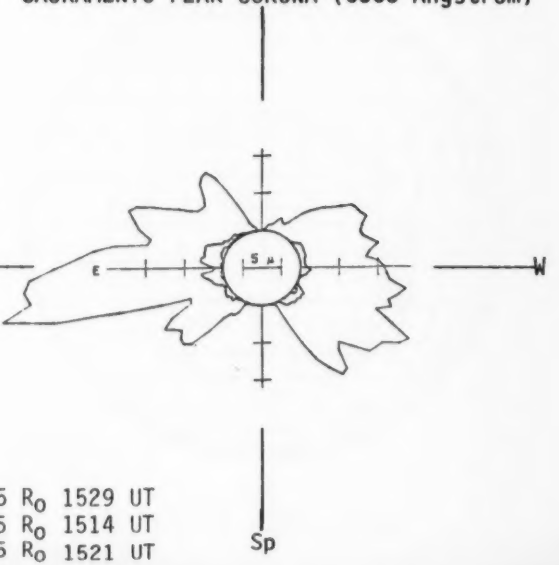
SACRAMENTO PEAK H-ALHPA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 10, 1 9 8 3 (P=-15.48, B_o=-6.58, L_o= 72.63)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

Sp

1945 UT BOUL Prom

Sp

1.35 R_O 1514 UT
1.55 R_O 1521 UT

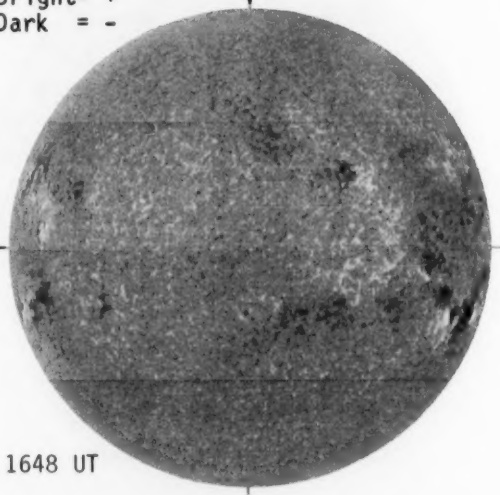
Sp

F E B R U A R Y 10, 1 9 8 3 (P=-15.48, B_O=-6.58, L_O= 72.63)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



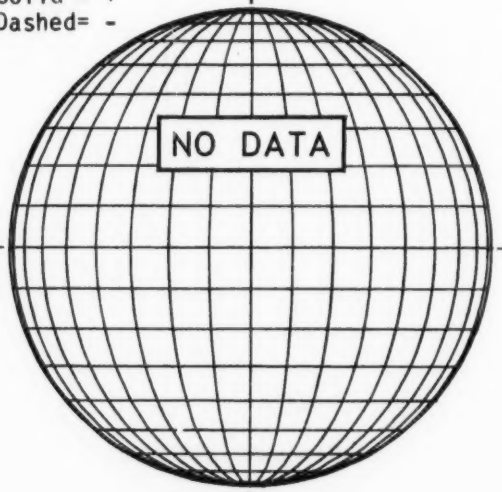
E

1648 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

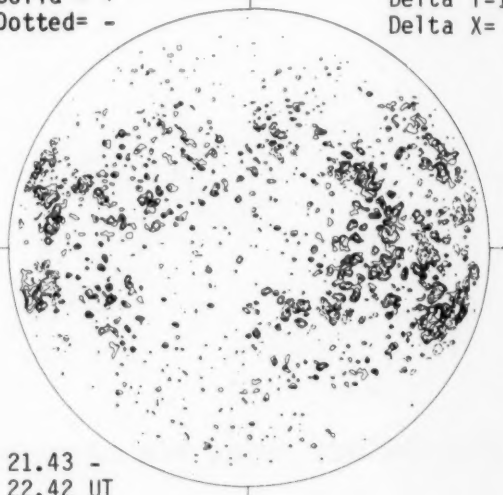


MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

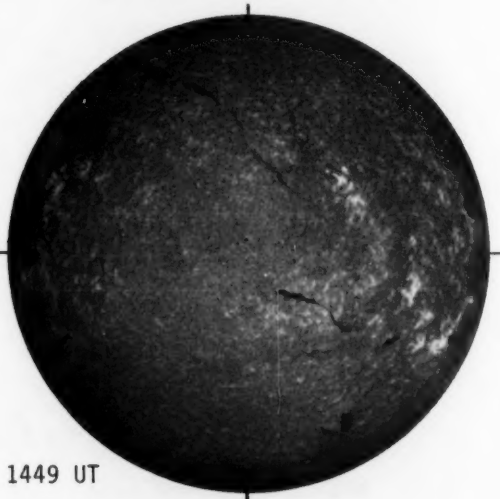
Delta Y=12.7
Delta X= 9.6



W

21.43 -
22.42 UT

SACRAMENTO PEAK H-ALPHA

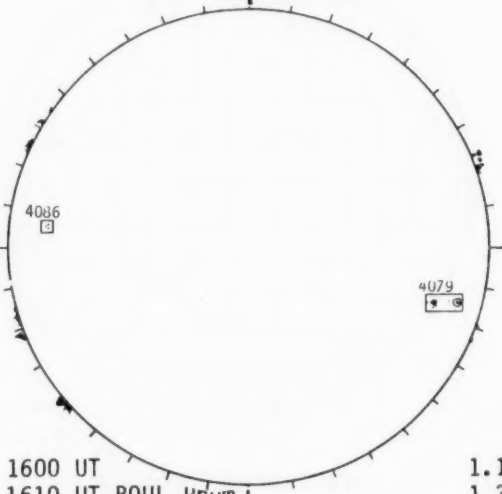


E

1449 UT

Sp

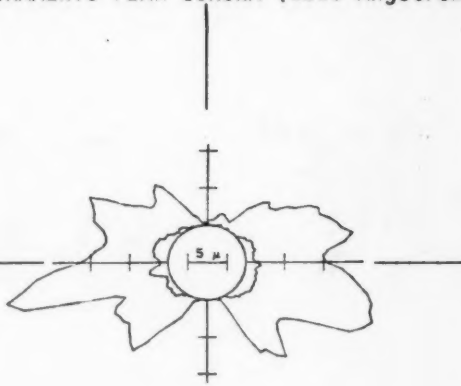
BOULDER SUNSPOTS



1600 UT
1610 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



W

1.15 R_O 1617 UT
1.35 R_O 1623 UT

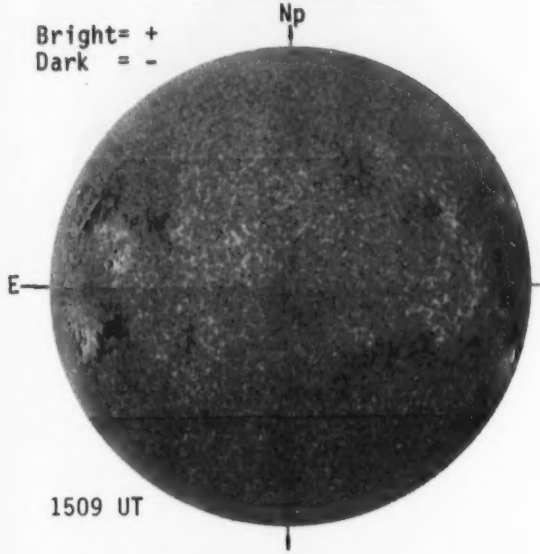
Sp

47
Feb 83

F E B R U A R Y 11, 1 9 8 3 (P=-15.85, B_o=-6.63, L_o= 59.46)

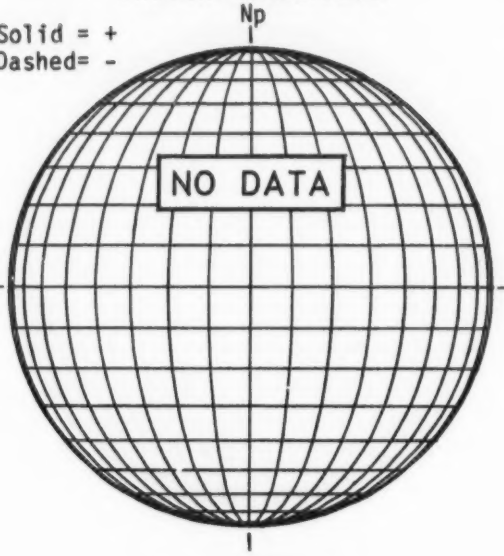
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



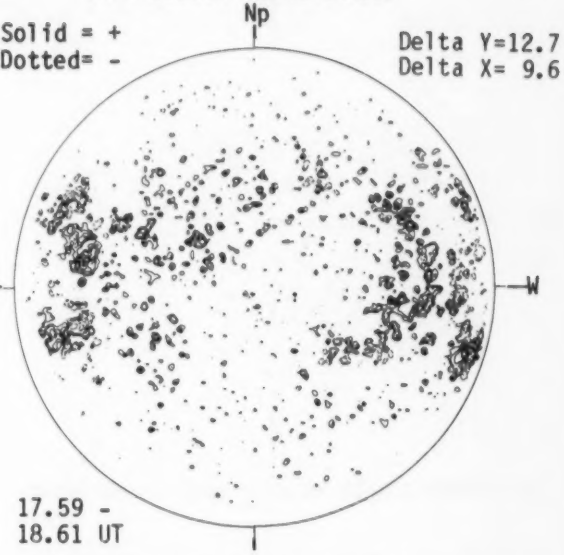
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

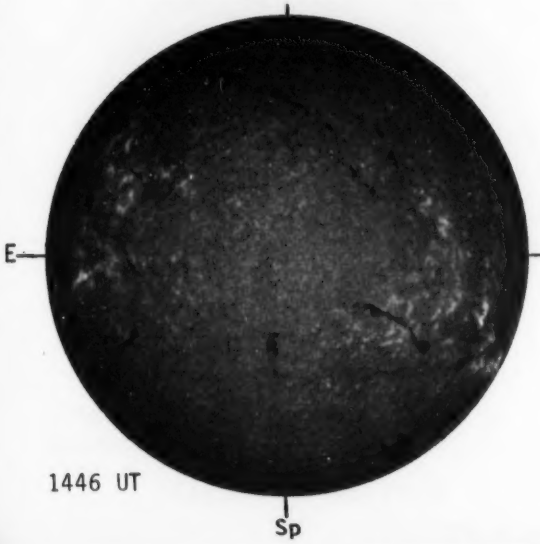


MT. WILSON MAGNETOGRAM

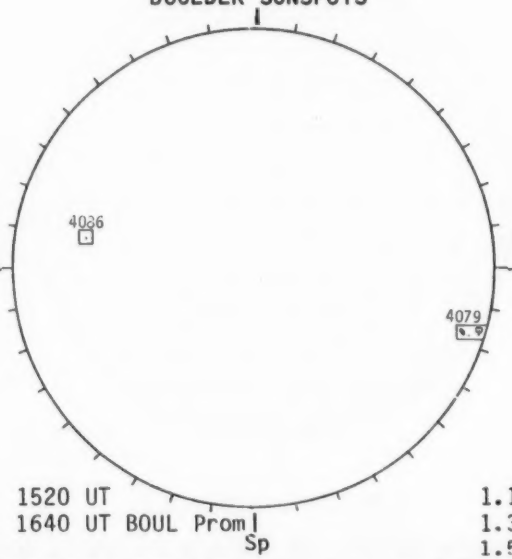
Solid = +
Dotted= -



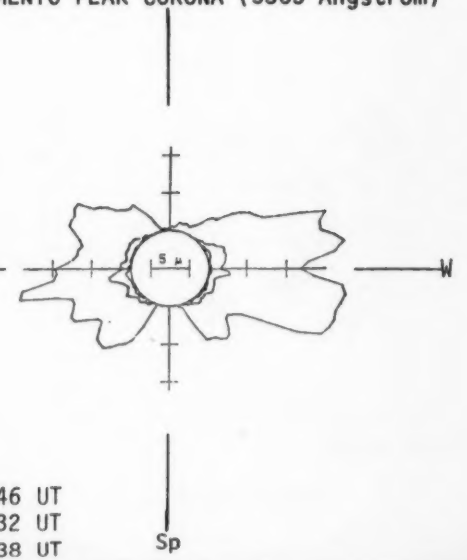
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 12, 1 9 8 3 (P=-16.20, B_o=-6.68, L_o= 46.29)

1446 UT

Sp

1520 UT
1640 UT BOUL Prom

Sp

1.15 R_o 1546 UT
1.35 R_o 1532 UT
1.55 R_o 1538 UT

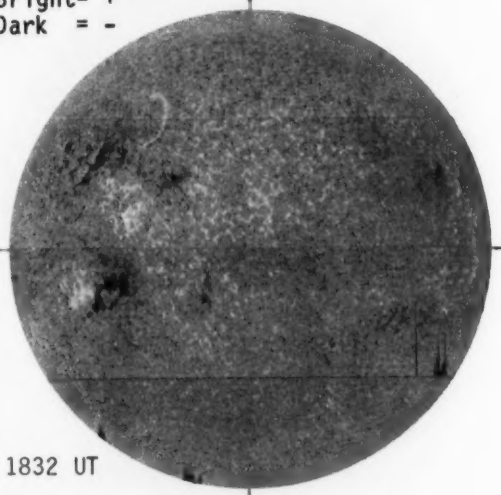
Sp

F E B R U A R Y 12, 1 9 8 3 (P=-16.20, B_o=-6.68, L_o= 46.29)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



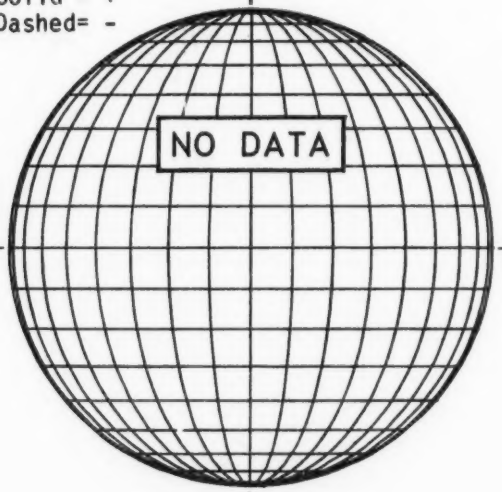
E

1832 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

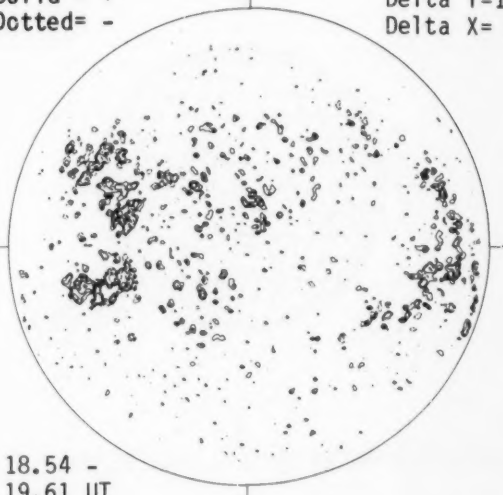


MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.7



W

18.54 -
19.61 UT

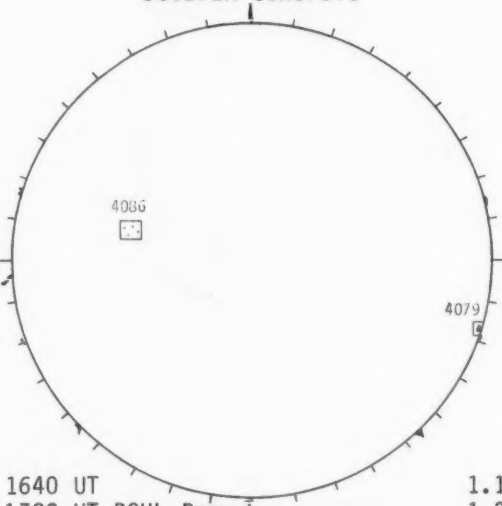
SACRAMENTO PEAK H-ALPHA

E

1511 UT

Sp

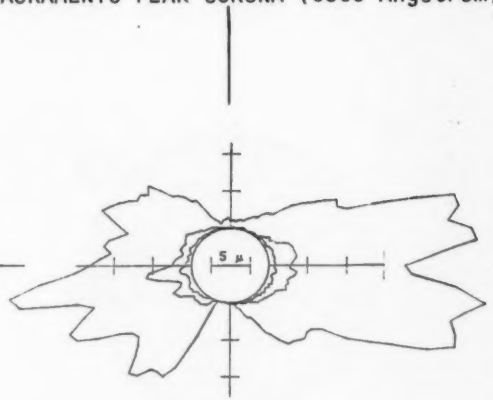
BOULDER SUNSPOTS



1640 UT
1700 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



W

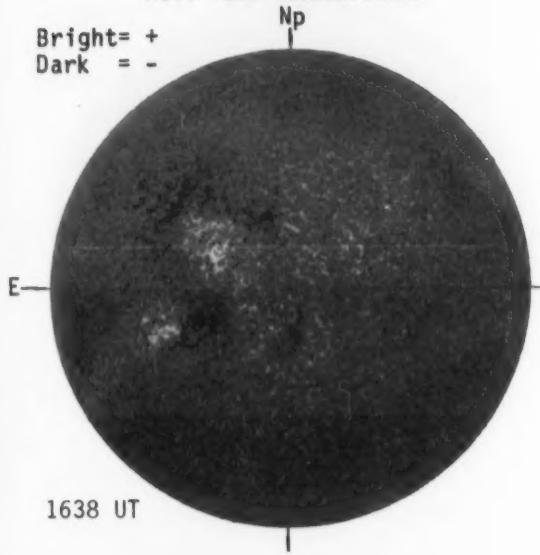
1.15 R_o 1554 UT
1.35 R_o 1539 UT
1.55 R_o 1546 UT

Sp

F E B R U A R Y 13, 1 9 8 3 (P=-16.56, B_o=-6.73, L_o= 33.13)

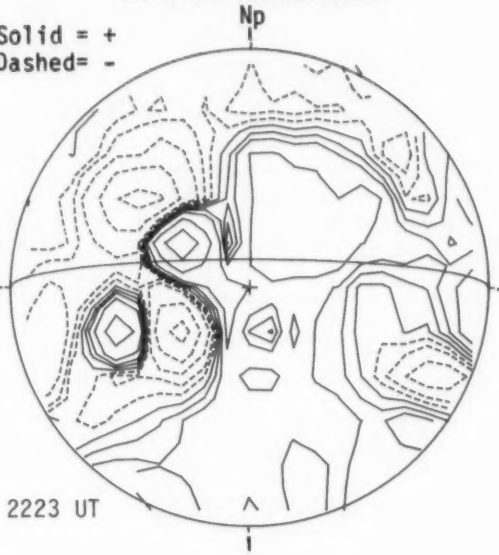
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

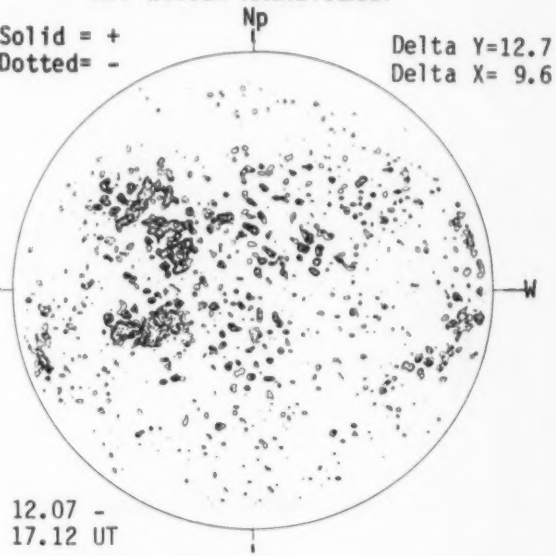
Solid = +
Dashed= -



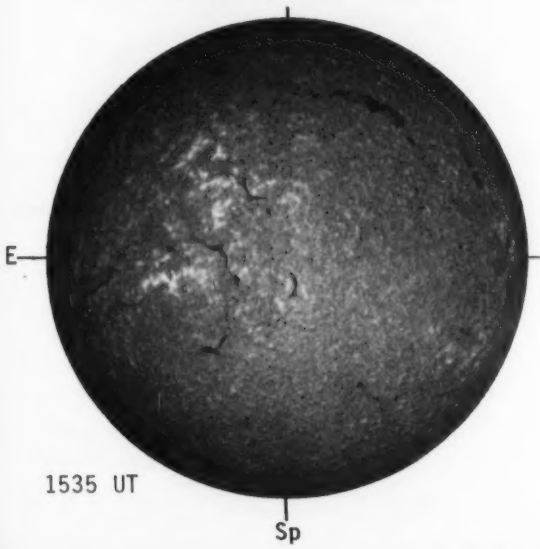
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

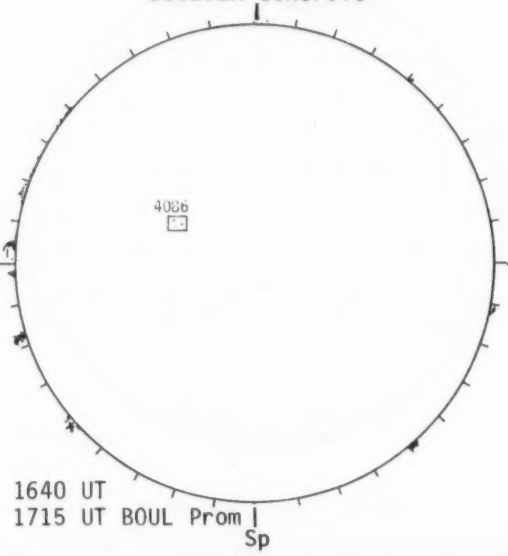
Delta Y=12.7
Delta X= 9.6



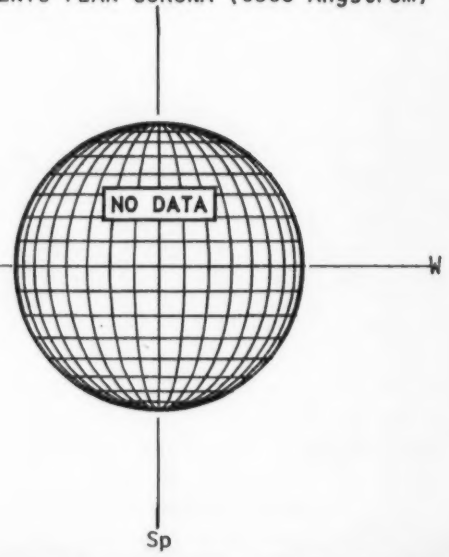
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 14, 1 9 8 3 (P=-16.91, B_o=-6.78, L_o= 19.96)

Sp

1715 UT BOUL Prom

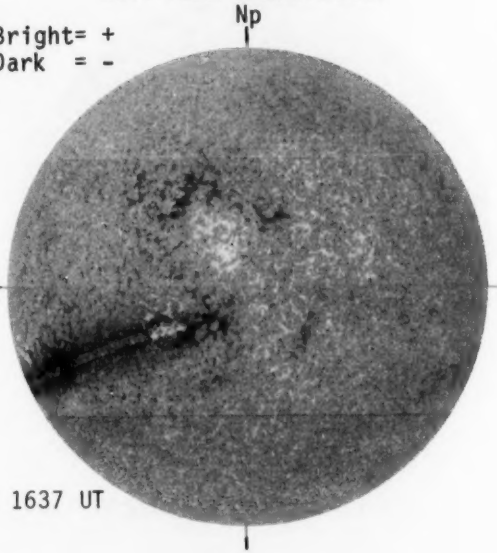
Sp

Sp

F E B R U A R Y 14, 1 9 8 3 (P=-16.91, B_o=-6.78, L_o= 19.96)

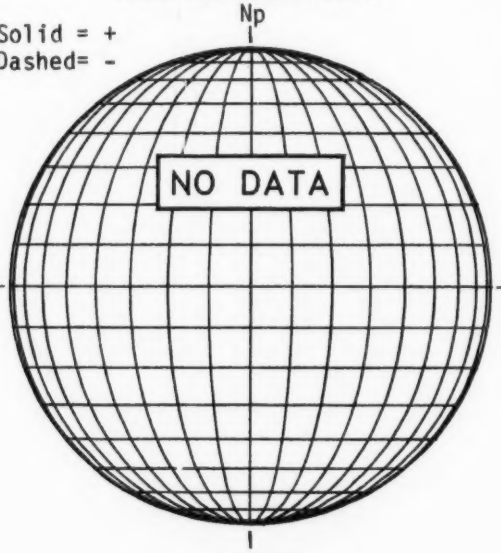
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

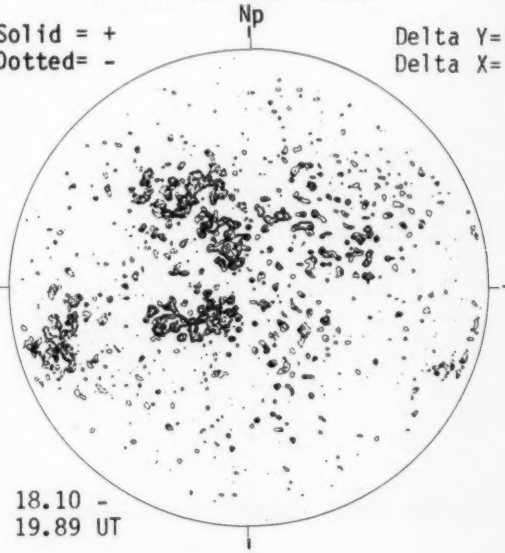
Solid = +
Dashed= -



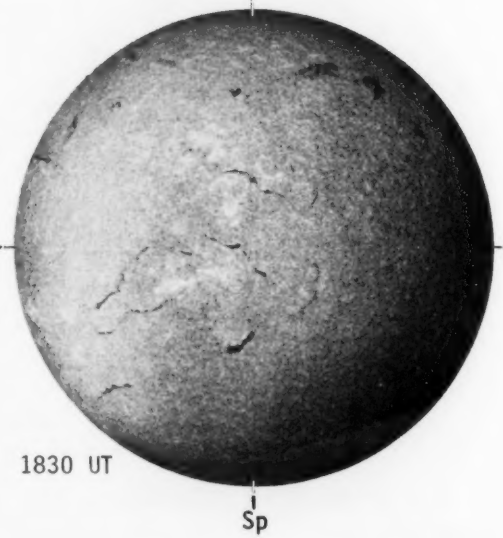
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

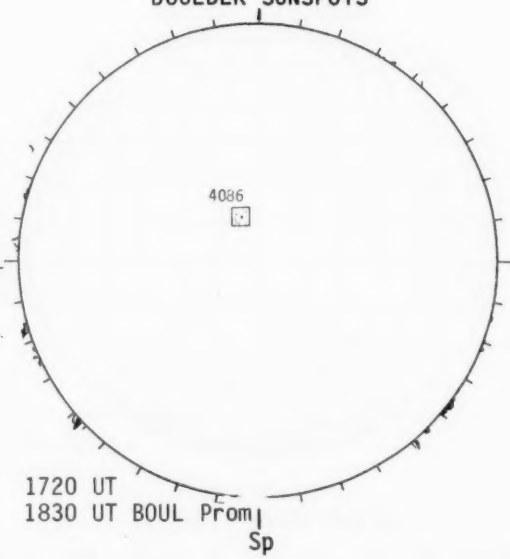
Delta Y=12.7
Delta X= 9.6



BOULDER H-ALPHA



BOULDER SUNSPOTS



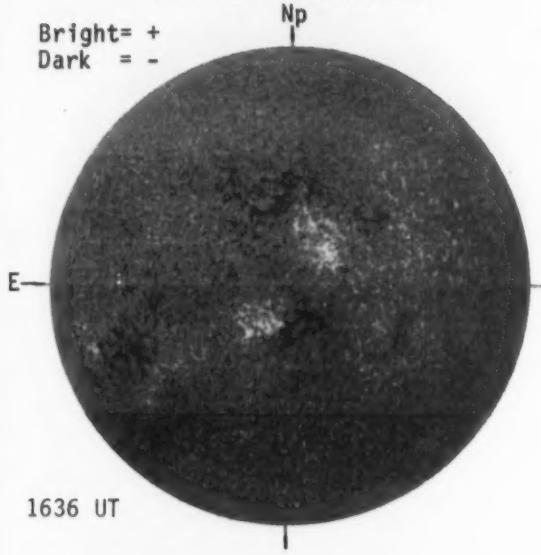
SACRAMENTO PEAK CORONA (5303 Angstrom)

51
Feb 83

F E B R U A R Y 15, 1 9 8 3 (P=-17.25, B_o=-6.82, L_o= 6.79)

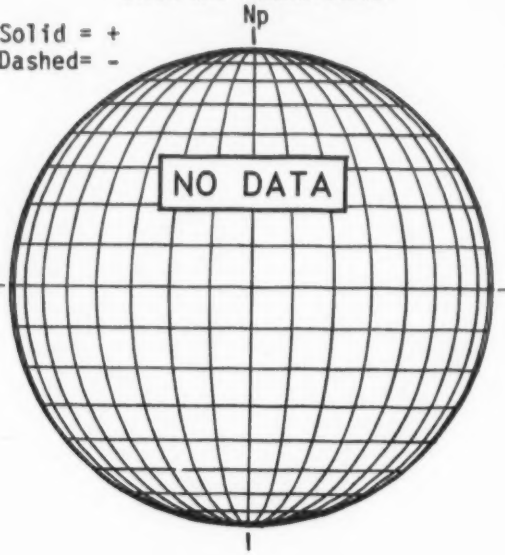
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

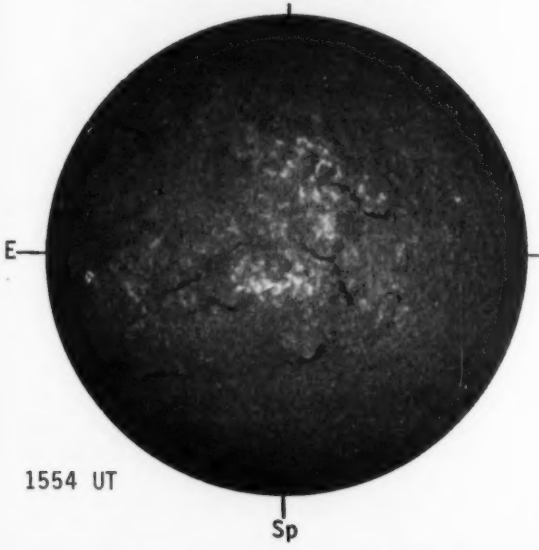
Solid = +
Dashed= -



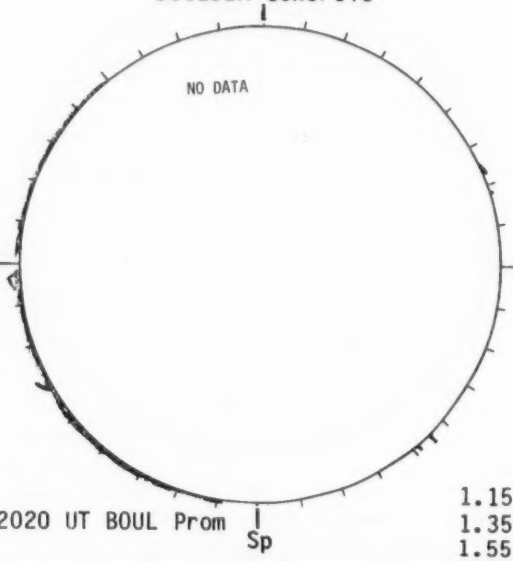
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

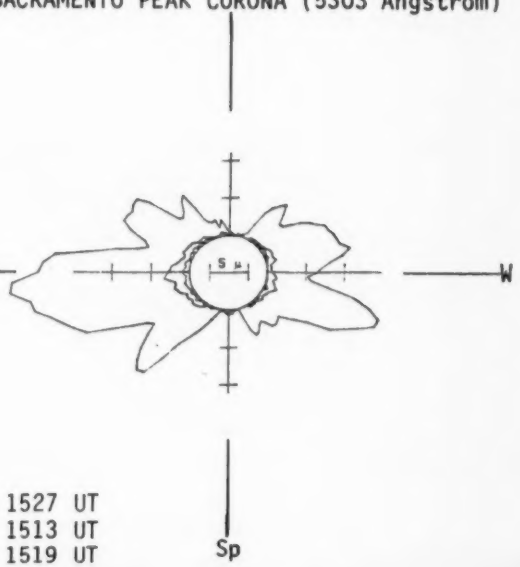
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 1527 UT
1.35 R_o 1513 UT
1.55 Ro 1519 UT

F E B R U A R Y 16, 1 9 8 3 (P=-17.58, B_o=-6.86, L_o= 353.62)

Sp

2020 UT BOUL Prom

Sp

1.35 R_o 1513 UT
1.55 Ro 1519 UT

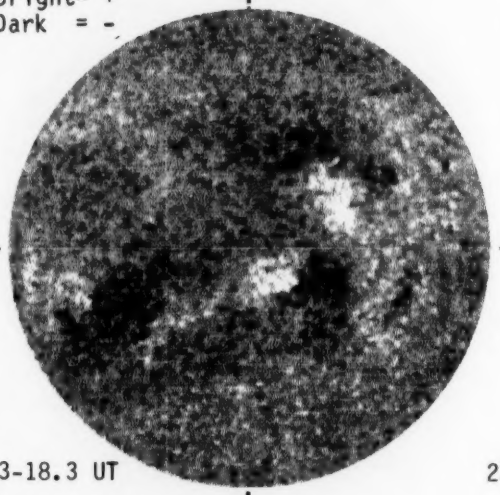
Sp

F E B R U A R Y 16, 1 9 8 3 (P=-17.58, B_o=-6.86, L_o= 353.62)

MT. WILSON MAGNETOGRAM

Np

Bright= +
Dark = -



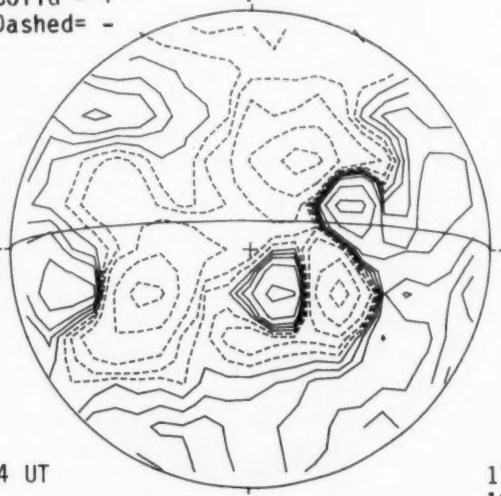
E

17.3-18.3 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -



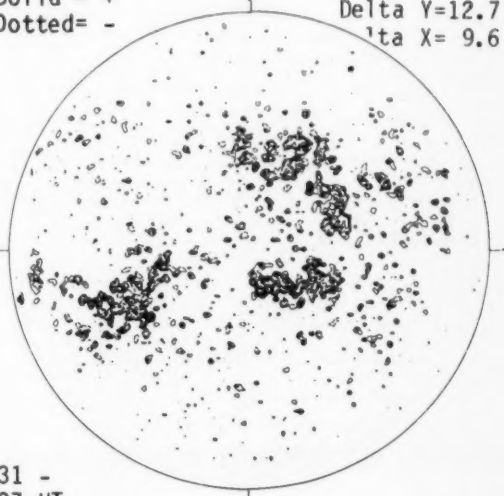
2314 UT

MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

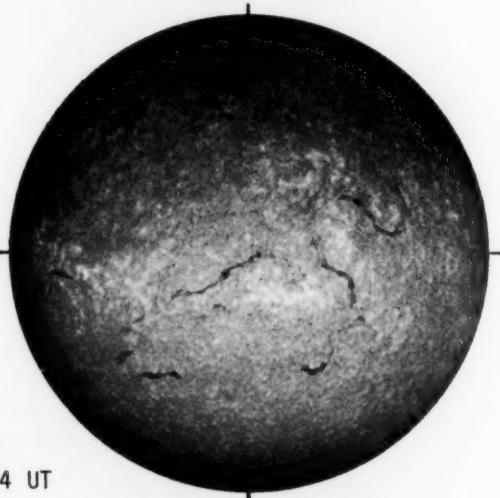
Delta Y=12.7
lta X= 9.6



W

17.31 -
18.27 UT

SACRAMENTO PEAK H-ALPHA

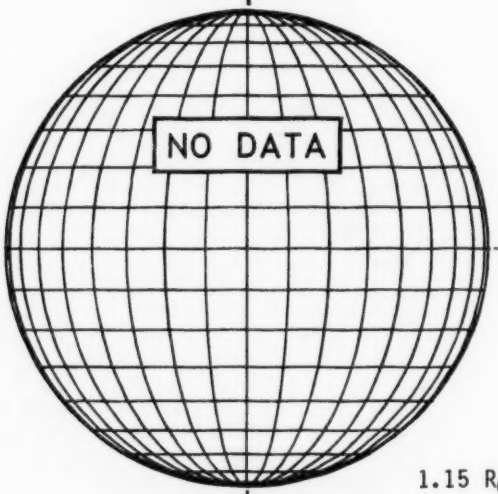


E

1614 UT

Sp

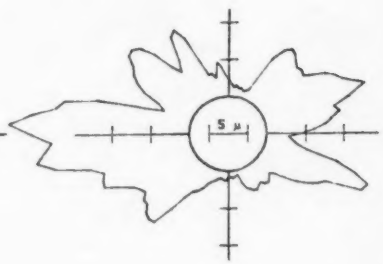
BOULDER SUNSPOTS



Sp

1.15 R_o 1646 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)



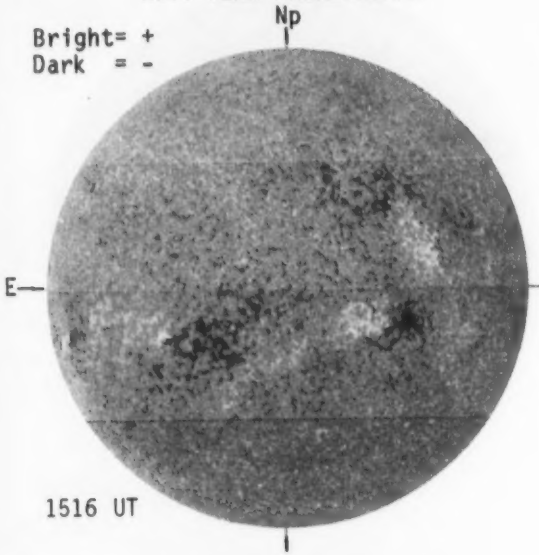
W

Sp

F E B R U A R Y 17, 1 9 8 3 (P=-17.91, B_o=-6.90, L_o= 340.46)

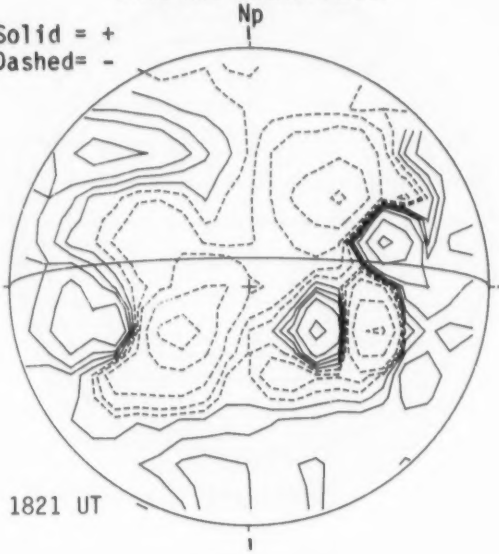
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

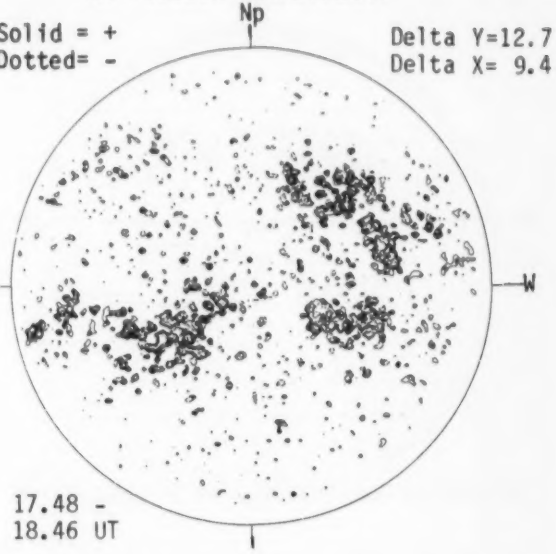
Solid = +
Dashed= -



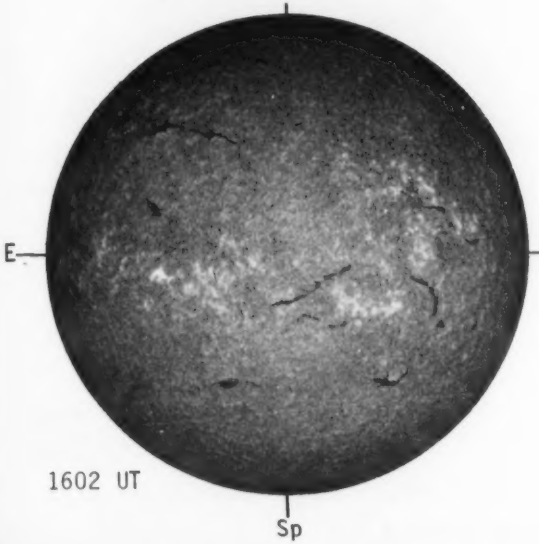
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

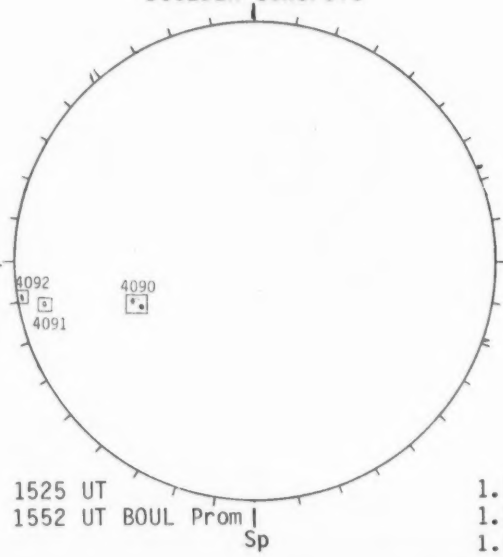
Delta Y=12.7
Delta X= 9.4



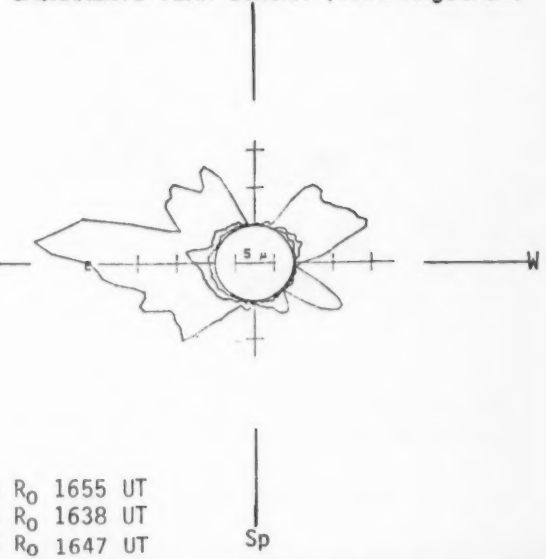
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 18, 1 9 8 3 (P=-18.24, B_o=-6.94, L_o= 327.29)

Sp

1552 UT BOUL Prom

Sp

1.35 R_O 1638 UT
1.55 R_O 1647 UT

Sp

F E B R U A R Y 18, 1 9 8 3 (P=-18.24, B_O=-6.94, L_O= 327.29)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

NO DATA

E

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

NO DATA

MT. WILSON MAGNETOGRAM

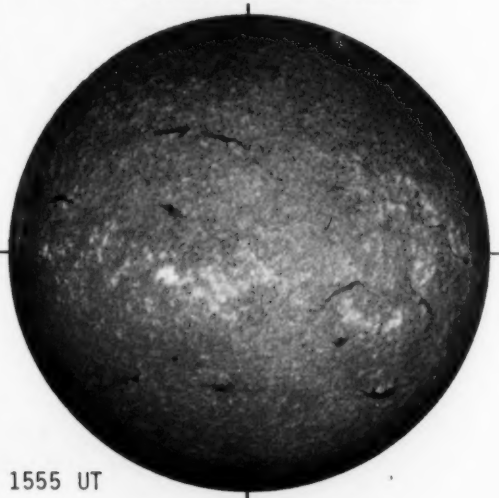
Solid = +
Dotted= -

Np

NO DATA

W

SACRAMENTO PEAK H-ALPHA

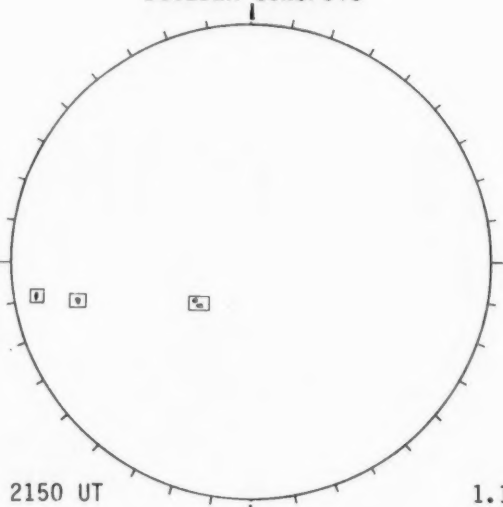


E

1555 UT

Sp

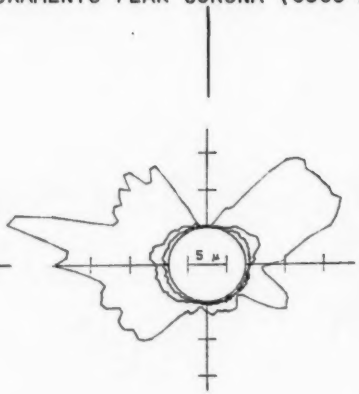
BOULDER SUNSPOTS



2150 UT

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



W

1.15 R_O 2013 UT
1.35 R_O 2019 UT
1.55 R_O 2025 UT

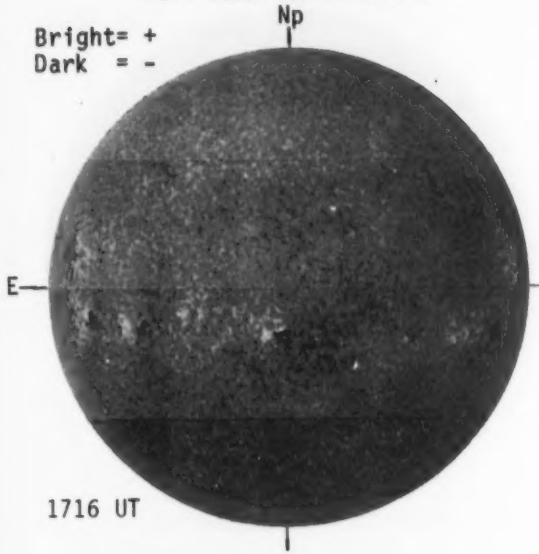
Sp

55
Feb 83

F E B R U A R Y 19, 1 9 8 3 (P=-18.56, B_o=-6.98, L_o= 314.12)

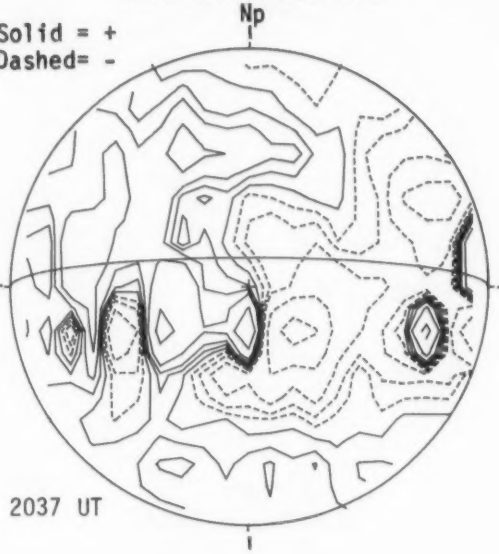
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

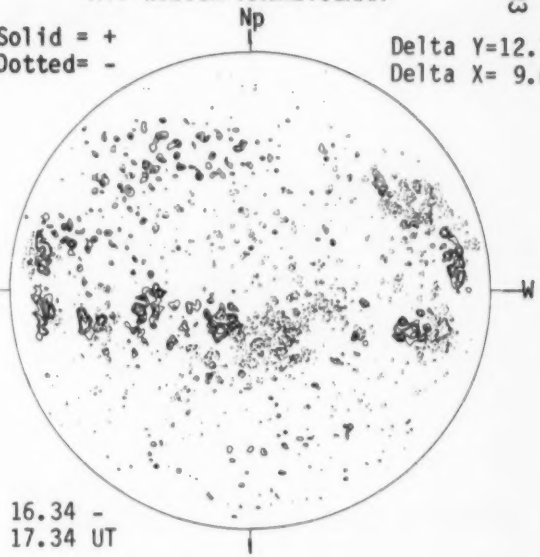
Solid = +
Dashed= -



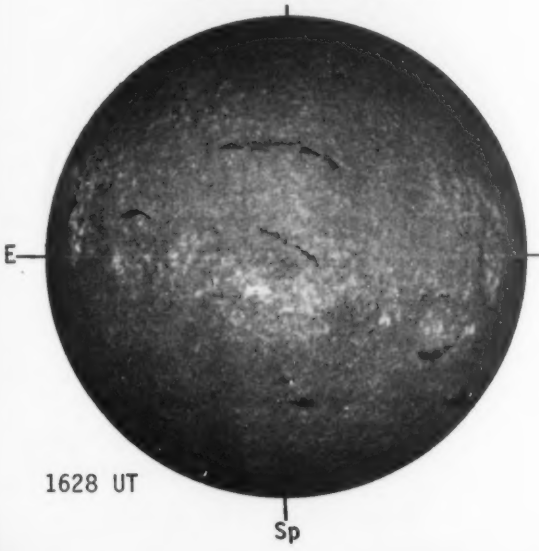
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

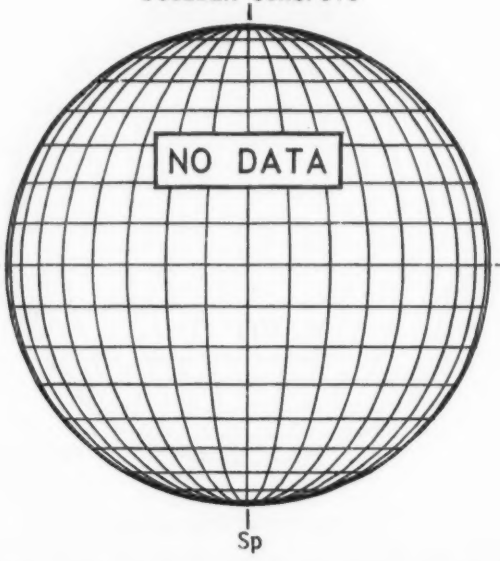
Delta Y=12.7
Delta X= 9.6



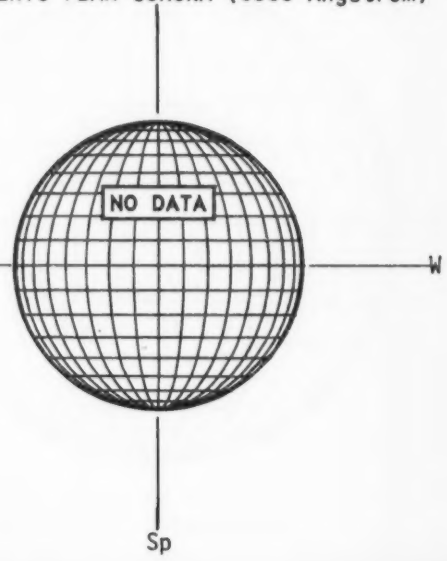
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



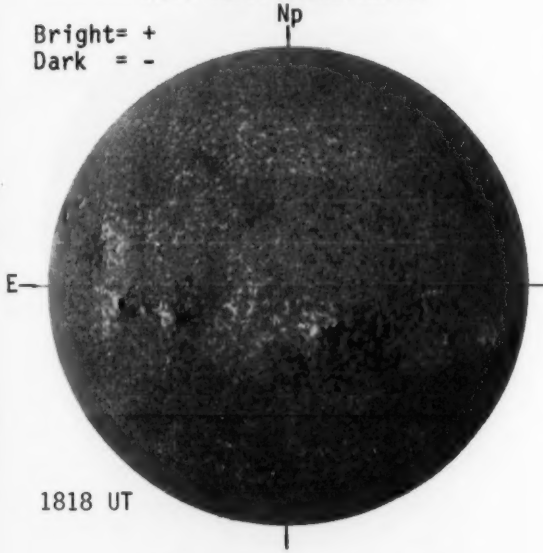
F E B R U A R Y 20, 1 9 8 3 (P=-18.87, B_o=-7.01, L_o= 300.95)

Sp Sp Sp

F E B R U A R Y 20, 1 9 8 3 (P=-18.87, B_o=-7.01, L_o= 300.95)

KITT PEAK MAGNETOGRAM

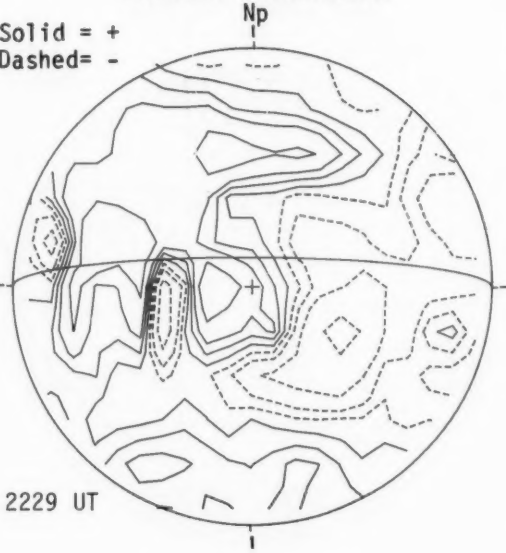
Bright= +
Dark = -



1818 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

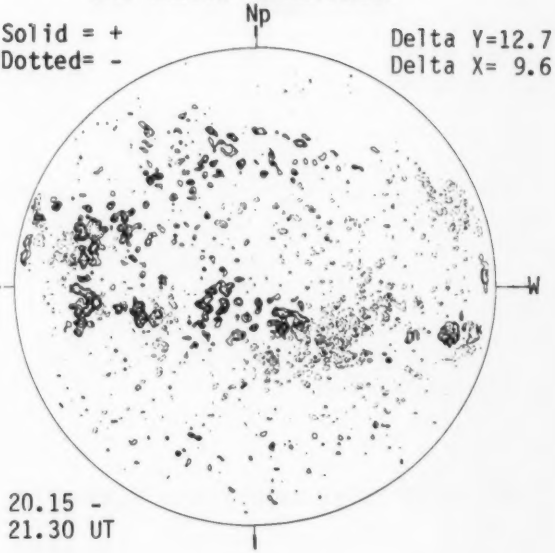


2229 UT

MT. WILSON MAGNETOGRAM

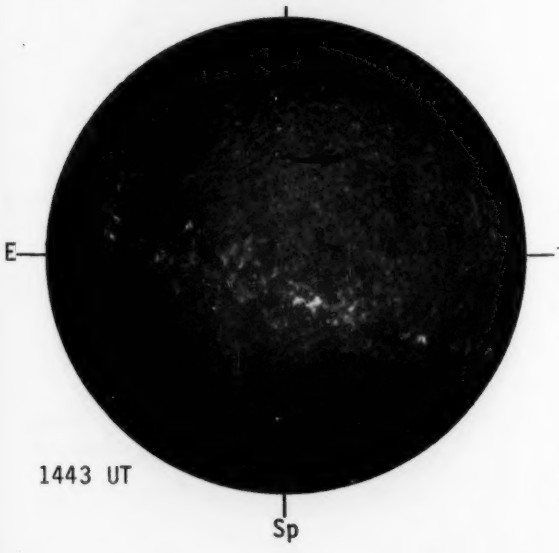
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



20.15 -
21.30 UT

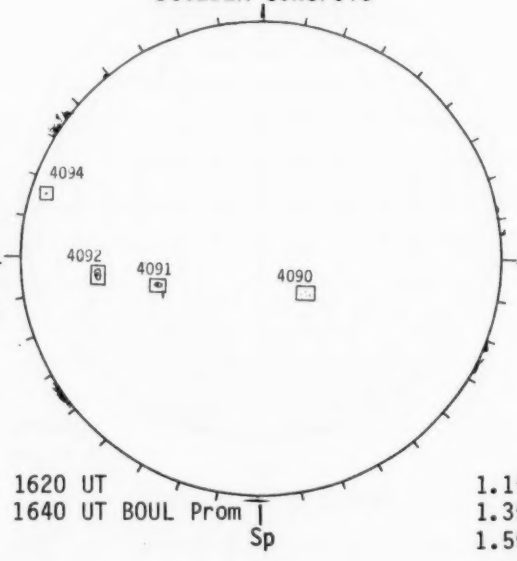
SACRAMENTO PEAK H-ALPHA



1443 UT

Sp

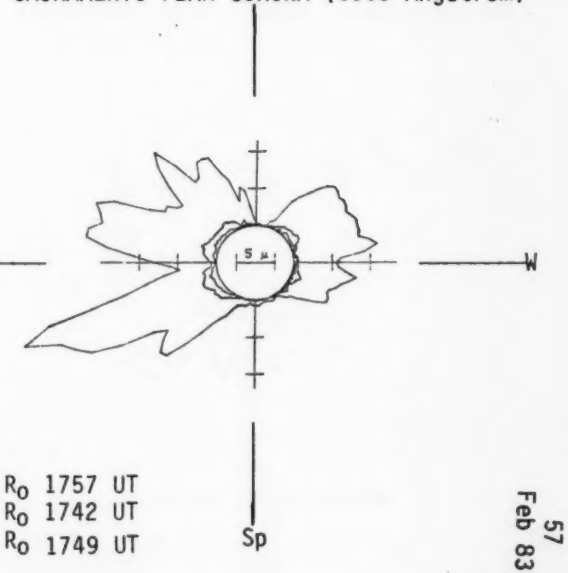
BOULDER SUNSPOTS



1620 UT
1640 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 1757 UT
1.35 R_o 1742 UT
1.55 R_o 1749 UT

Sp

57
Feb 83

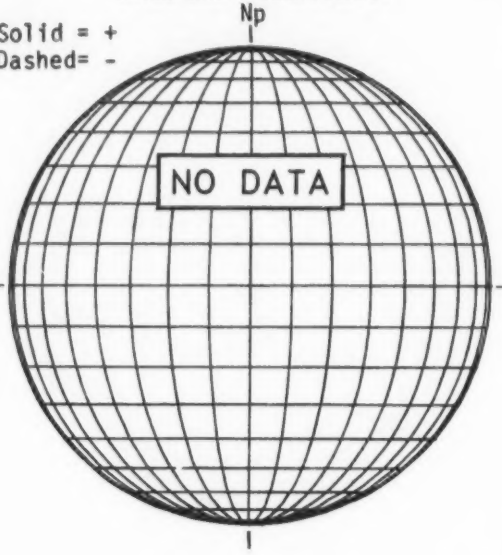
F E B R U A R Y 21, 1 9 8 3 (P=-19.18, B_0=-7.04, L_0= 287.78)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

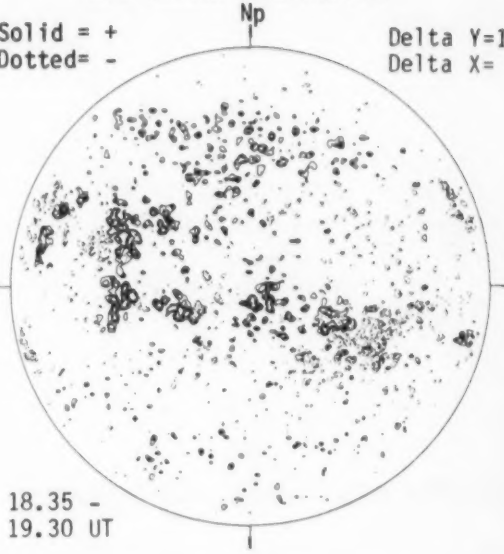
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

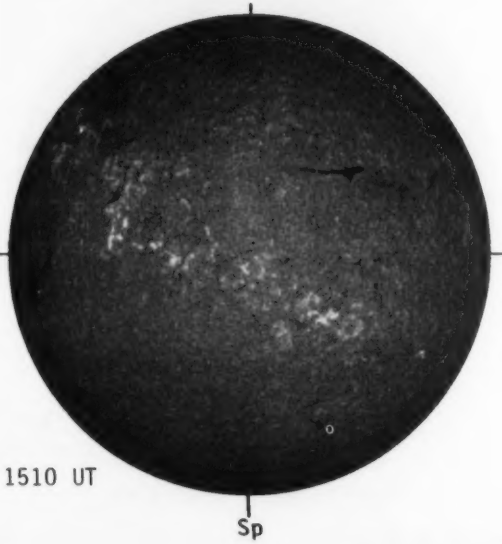


MT. WILSON MAGNETOGRAM

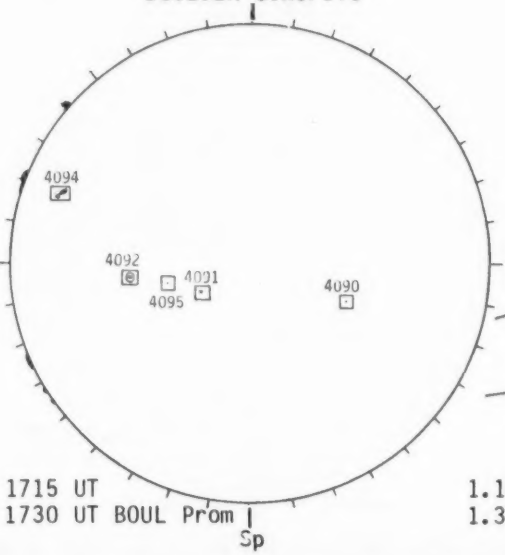
Solid = +
Dotted= -
Delta Y=12.6
Delta X= 9.6



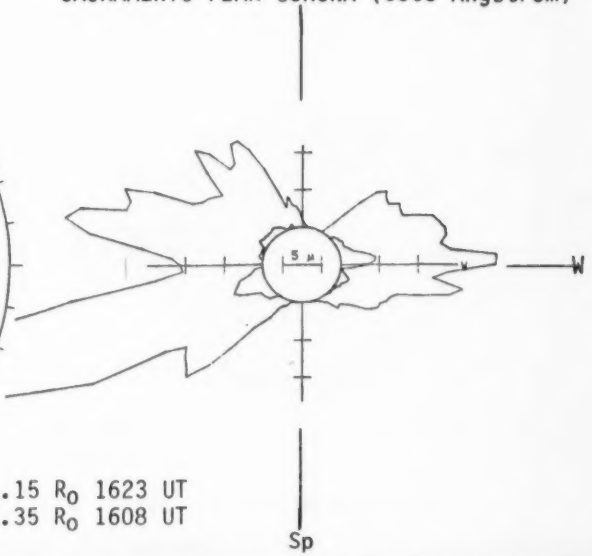
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 22, 1 9 8 3 (P=-19.48, B_0=-7.07, L_0= 274.61)

1730 UT BOUL Prom

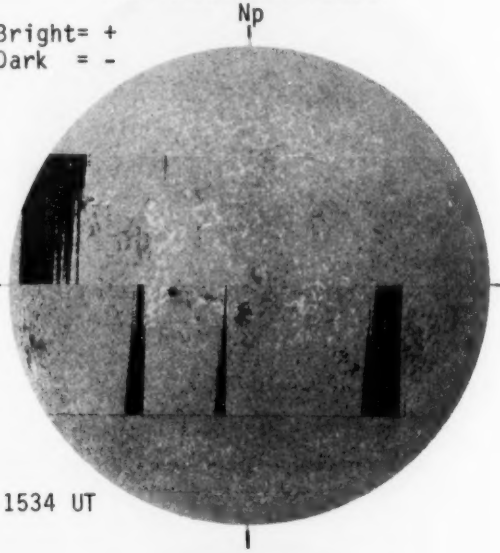
1.35 R_o 1608 UT

Sp Sp Sp

F E B R U A R Y 22, 1 9 8 3 (P=-19.48, B_o=-7.07, L_o= 274.61)

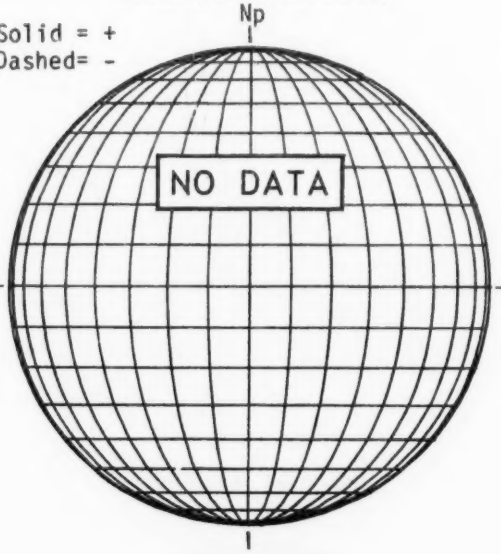
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

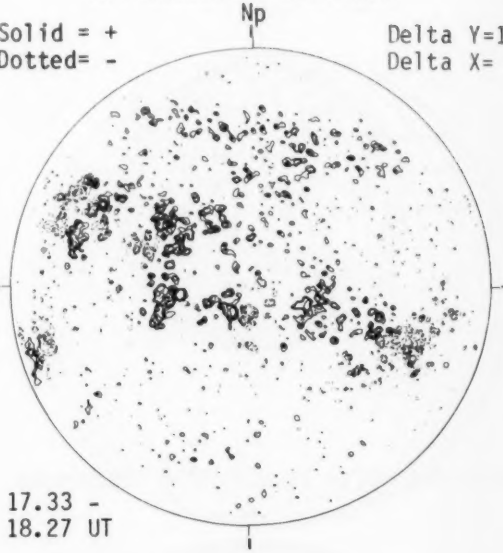
Solid = +
Dashed= -



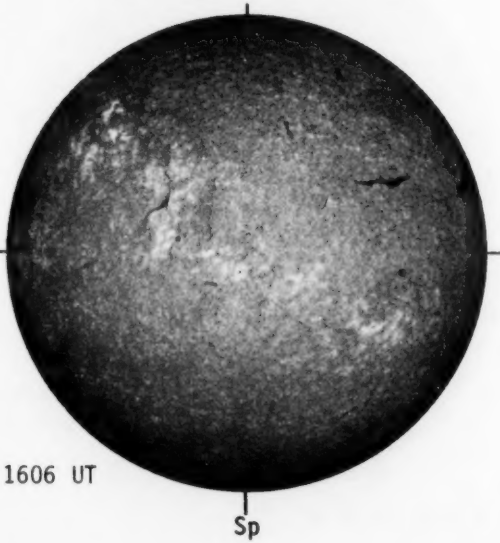
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

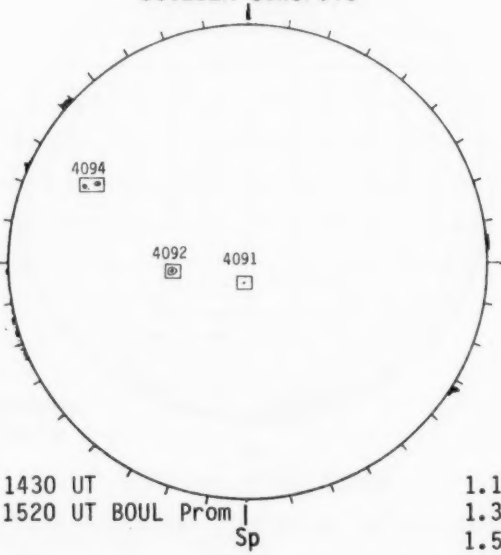
Delta Y=12.7
Delta X= 9.6



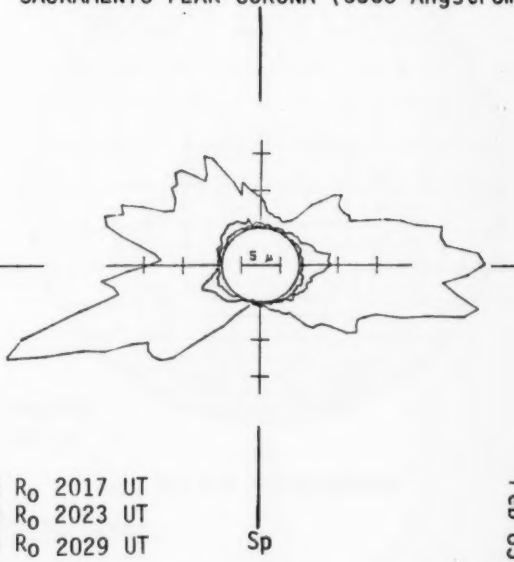
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

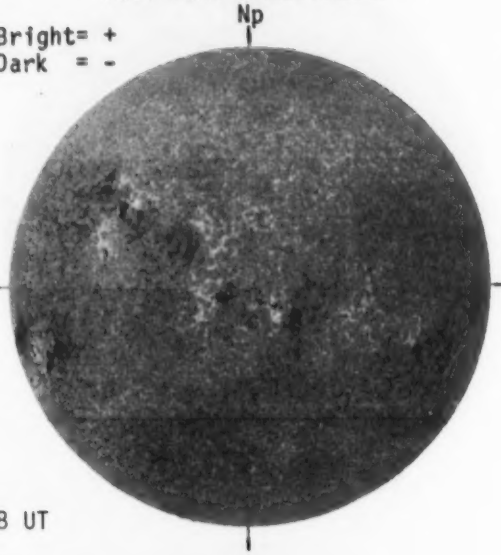


59
Feb 83

F E B R U A R Y 23, 1 9 8 3 (P=-19.78, B_0=-7.10, L_0= 261.44)

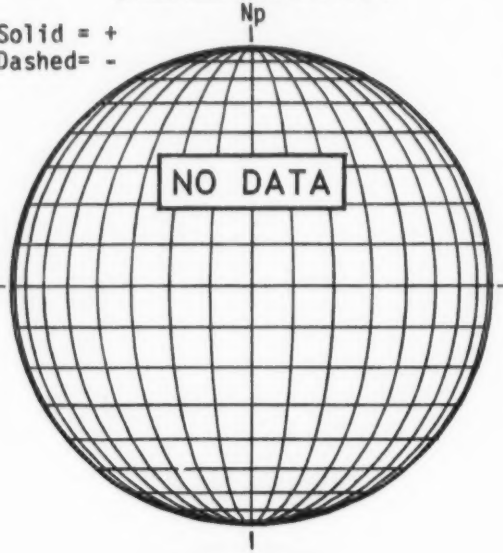
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

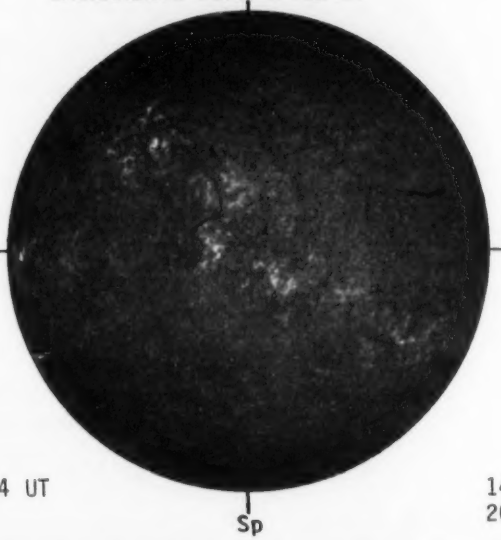
Solid = +
Dashed= -



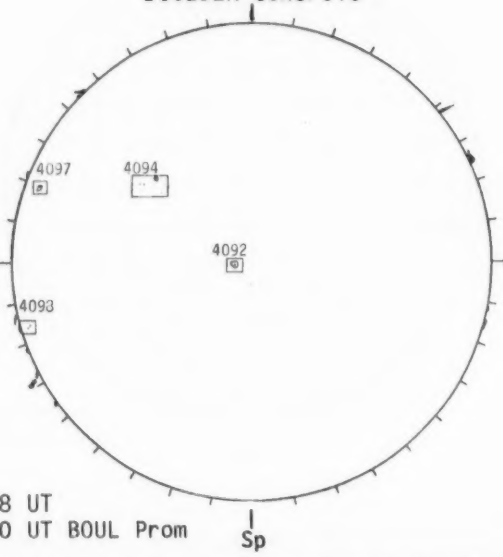
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

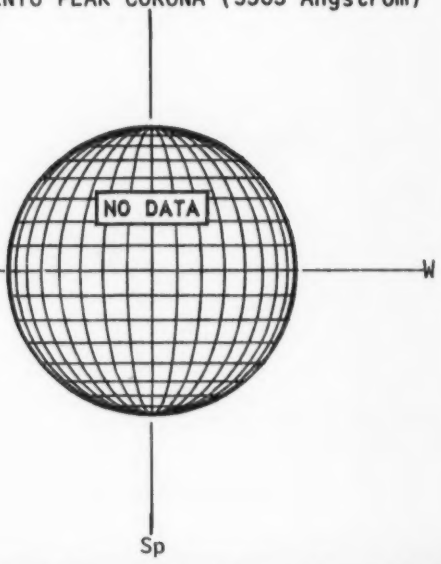
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 24, 1 9 8 3 (P=-20.07, B_0=-7.12, L_0= 248.27)

1434 UT

Sp

2030 UT BOUL Prom

Sp

Sp

F E B R U A R Y 24, 1 9 8 3 (P=-20.07, B_o=-7.12, L_o= 248.27)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -

NO DATA

E

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

2310 UT

MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

NO DATA

W

SACRAMENTO PEAK H-ALPHA

E

1626 UT

Sp

BOULDER SUNSPOTS

4097
4094
4092
4098
4099

1500 UT-
1445 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

W

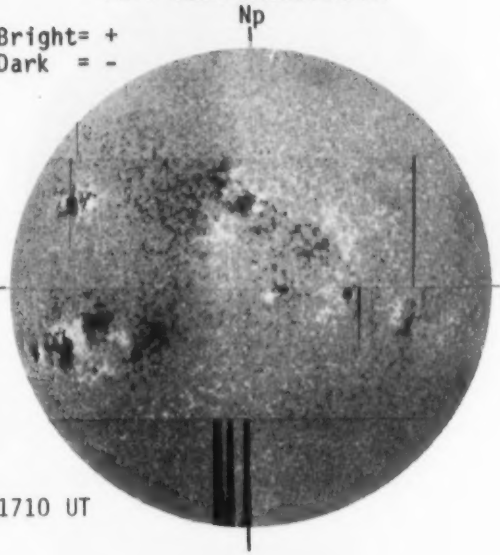
Sp

61
Feb 83

F E B R U A R Y 25, 1 9 8 3 (P=-20.35, B_0=-7.15, L_0= 235.10)

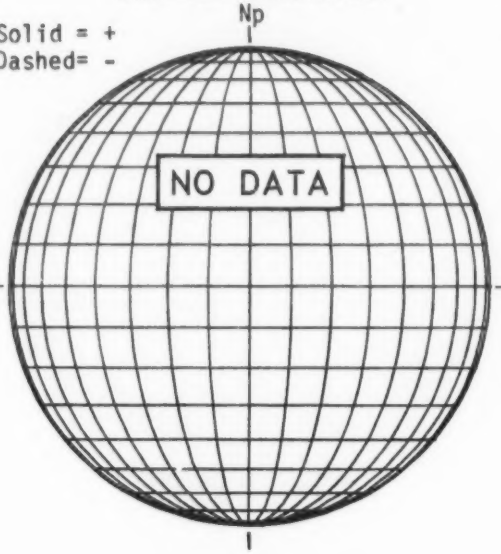
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



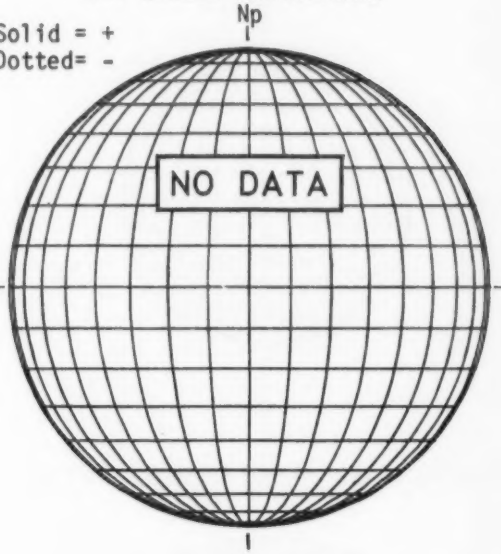
STANFORD MAGNETOGRAM

Solid = +
Dashed= -



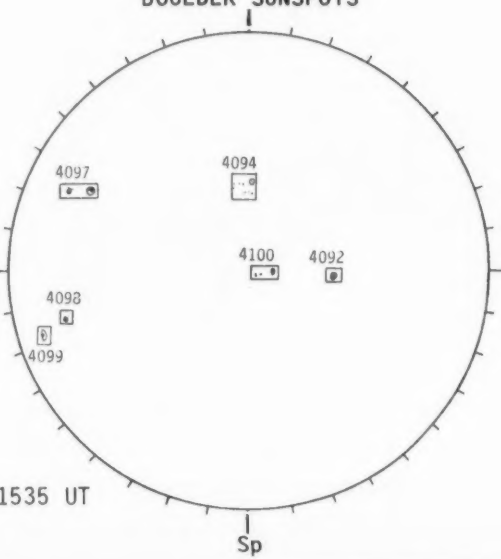
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

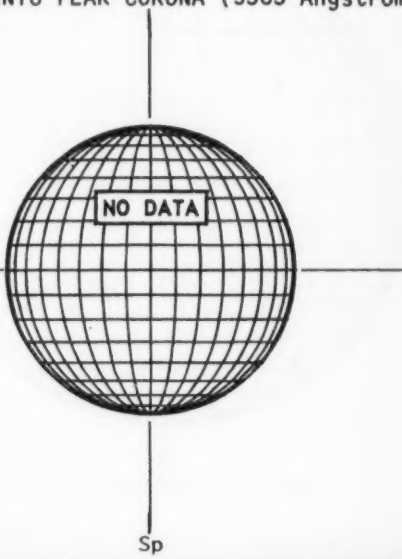


BOULDER H-ALPHA

BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 26, 1 9 8 3 (P=-20.63, B_0=-7.17, L_0= 221.93)

1535 UT

Sp

1535 UT

Sp

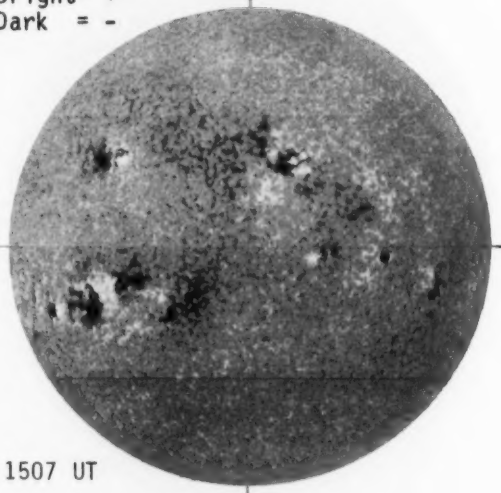
Sp

F E B R U A R Y 26, 1 9 8 3 (P=-20.63, B_o=-7.17, L_o= 221.93)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



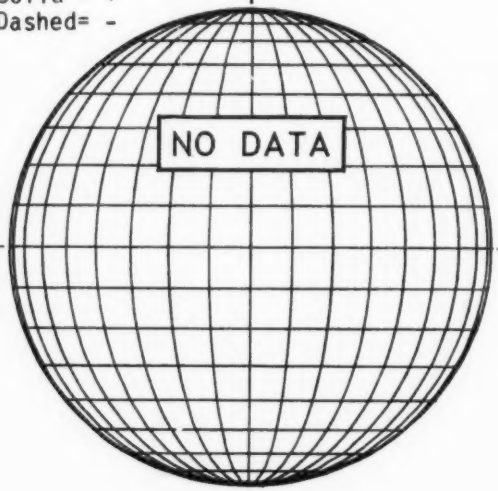
E

1507 UT

STANFORD MAGNETOGRAM

Np

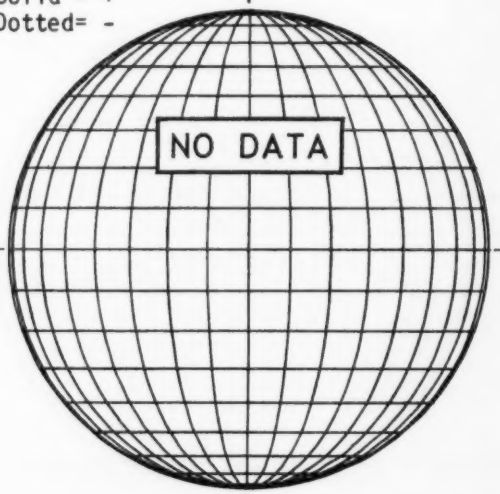
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -



W

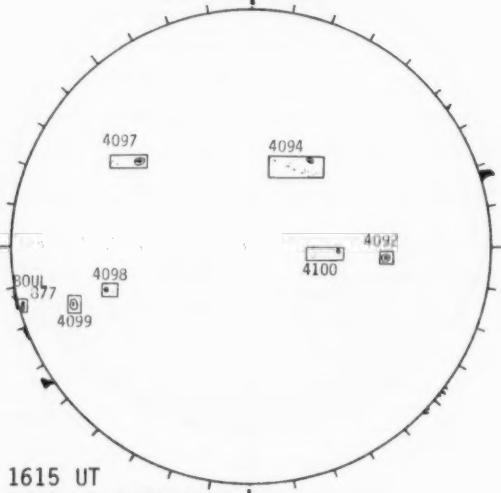
SACRAMENTO PEAK H-ALPHA

E

1715 UT

Sp

BOULDER SUNSPOTS



1615 UT
1645 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

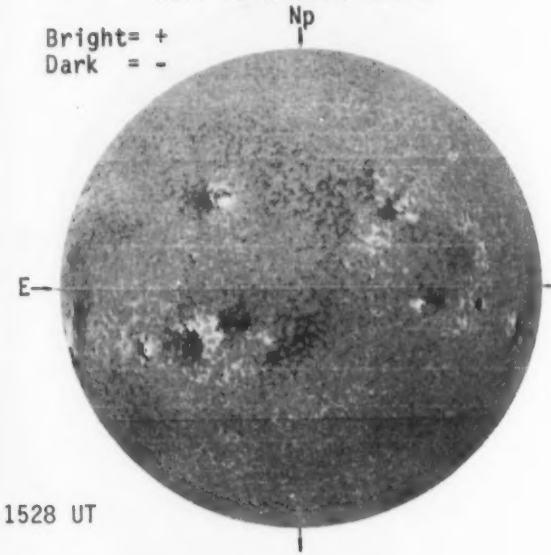
W

Sp

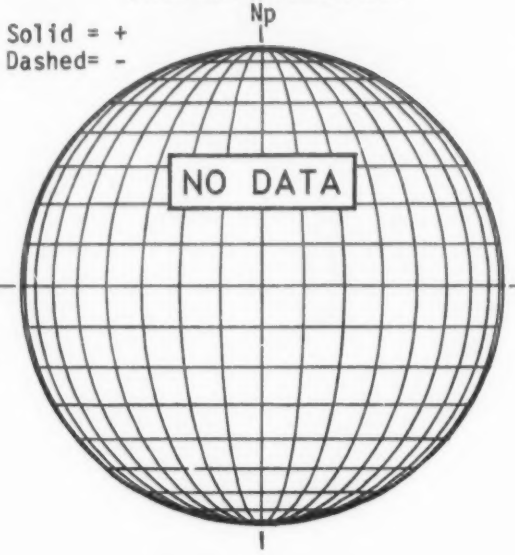
63
Feb 83

F E B R U A R Y 27, 1 9 8 3 (P=-20.90, B_o=-7.18, L_o= 208.76)

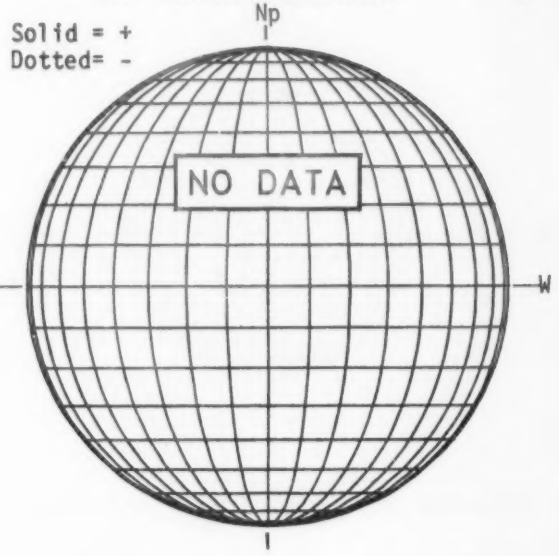
KITT PEAK MAGNETOGRAM



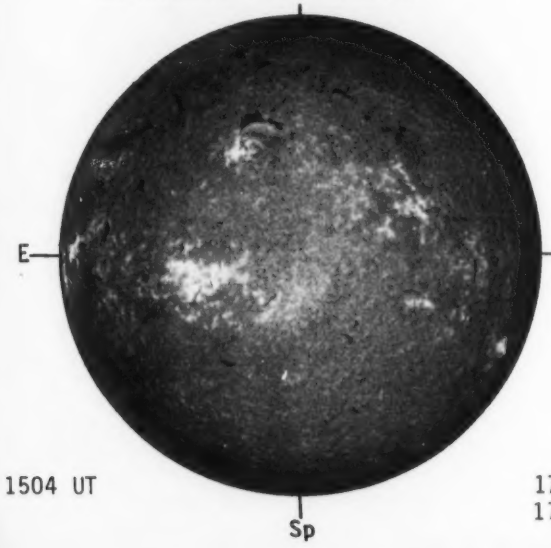
STANFORD MAGNETOGRAM



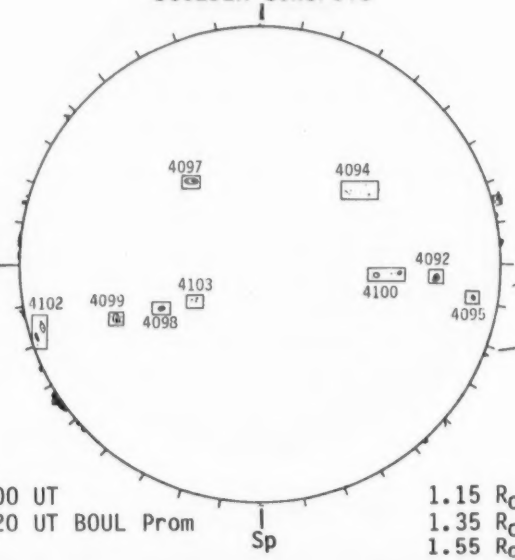
MT. WILSON MAGNETOGRAM



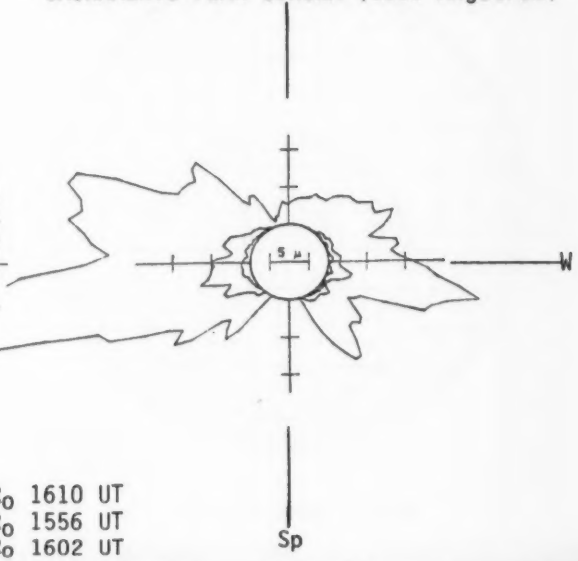
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



F E B R U A R Y 28, 1 9 8 3 (P=-21.17, B_o=-7.20, L_o= 195.58)

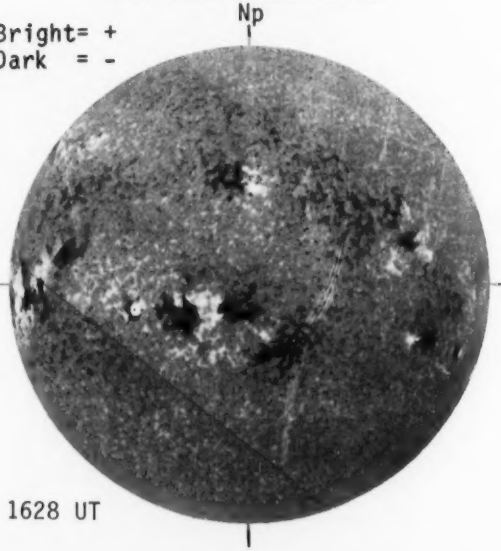
1720 UT BOUL Prom

1.35 R_o 1556 UT
1.55 R_o 1602 UT

F E B R U A R Y 28, 1 9 8 3 (P=-21.17, B_o=-7.20, L_o= 195.58)

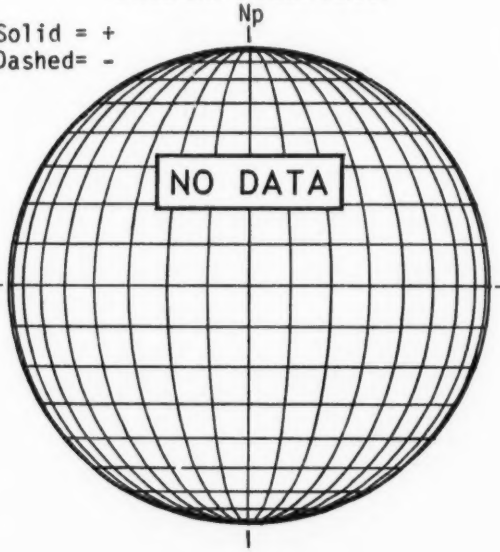
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



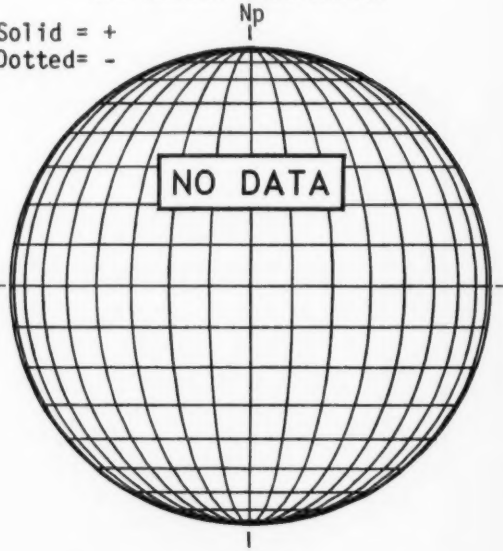
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

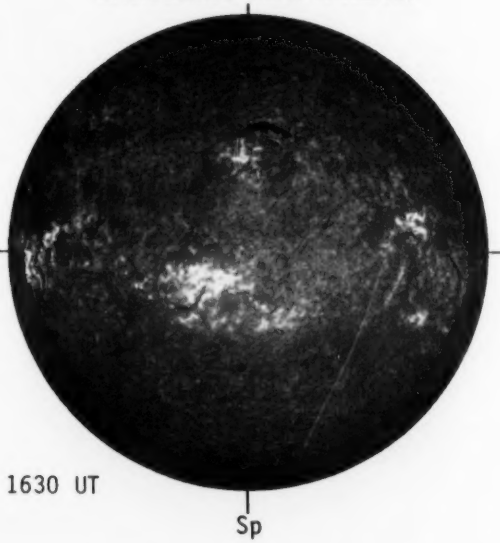


MT. WILSON MAGNETOGRAM

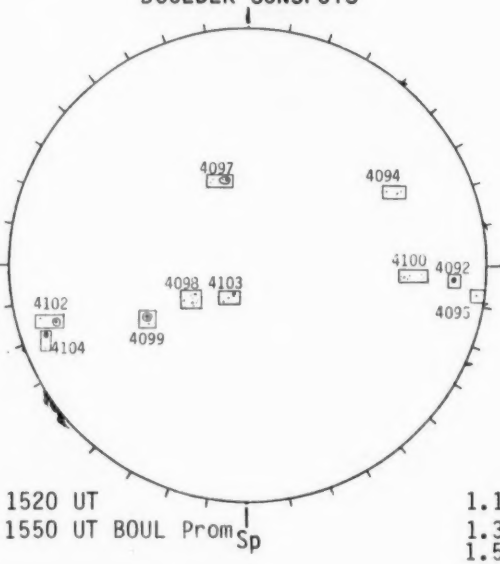
Solid = +
Dotted= -



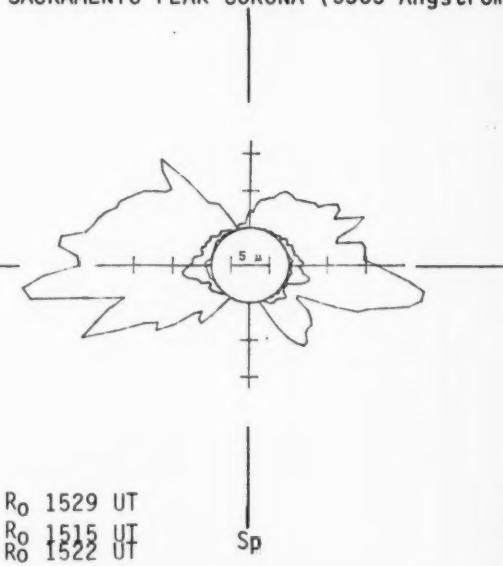
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



65
Feb 83

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem)	Spot Count	Long. Extent (Deg)	Qual
	23556	MWIL	02	01	1600	S21	E01	02	1.7	3	(AF)					
4075		HOLL	01	26	1609	S13	E81	02	1.8		A	HSX	20	1	2	3
4075	23549	MWIL	01	26	1700	S13	E78	02	1.6	3	(AP)					
4075		PALE	01	26	1840	S14	E81	02	1.9		A	HRX	10	1	1	4
4075		LEAR	01	27	0204	S13	E77	02	1.9		B	CRO	10	2	5	3
4075		RAMY	01	27	1315	S11	E71	02	1.9		B	CAO	60	3	8	3
4075		PALE	01	27	2030	S13	E67	02	1.9		B	DSO	80	5	9	2
4075		HOLL	01	27	2200	S13	E66	02	1.9		B	DSO	130	3	7	2
4075		LEAR	01	28	0113	S14	E64	02	1.9		B	EAO	150	6	11	3
4075		RAMY	01	28	1310	S14	E57	02	1.9		B	DAO	80	6	10	3
4075		BOUL	01	28	1540	S13	E55	02	1.8		B	EAI	90	22	13	3
4075		HOLL	01	28	1550	S13	E57	02	2.0		B	DSO	140	5	9	2
4075	23549	MWIL	01	28	1930	S14	E55	02	2.0	4	B					
4075		PALE	01	28	2030	S13	E52	02	1.8		B	ESO	90	12	14	3
4075		LEAR	01	29	0011	S14	E52	02	1.9		B	DAO	100	10	12	3
4075		RAMY	01	29	1241	S15	E46	02	2.0		B	DAO	170	23	10	2
4075		HOLL	01	29	1558	S13	E43	02	1.9		B	EAO	170	18	12	4
4075	23549	MWIL	01	29	1600	S14	E43	02	1.9	4	(B)					
4075		PALE	01	29	2000	S13	E42	02	2.0		B	EAO	200	20	14	3
4075		LEAR	01	30	0014	S13	E40	02	2.0		BGD	FSI	220	20	16	3
4075	23549	MWIL	01	30	1630	S14	E31	02	2.0	4	(B)					
4075		BOUL	01	30	1645	S12	E31	02	2.0		B	DAO	70	8	7	2
4075		PALE	01	30	1906	S13	E29	02	2.0		BG	EAO	110	19	11	3
4075		LEAR	01	31	0030	S13	E26	02	2.0		B	EAO	190	19	12	2
4075		RAMY	01	31	1245	S15	E15	02	1.7		B	FAO	120	28	16	4
4075	23549	MWIL	01	31	1545	S14	E16	02	1.9	4	(B)					
4075		HOLL	01	31	1638	S13	E17	02	2.0		B	EAO	150	22	12	3
4075		PALE	01	31	1917	S15	E14	02	1.9		B	FAO	120	24	16	3
4075		LEAR	02	01	0040	S13	E14	02	2.1		B	ESO	170	10	13	3
4075		MANI	02	01	0207	S14	E13	02	2.1			EAO	130	21	13	3
4075	23549	MWIL	02	01	1600	S14	E04	02	2.0	4	(BY)					
4075		HOLL	02	01	1720	S14	E04	02	2.0		B	ESO	100	21	12	3
4075		PALE	02	01	1850	S14	E03	02	2.0		B	ESO	60	10	11	1
4075		MANI	02	01	2326	S14	W00	02	2.0			ESO	100	12	12	3
4075		LEAR	02	02	0030	S14	W01	02	1.9		B	ESO	90	10	11	3
4075		RAMY	02	02	1330	S14	W10	02	1.8		B	FAO	80	26	16	3
4075		HOLL	02	02	1546	S13	W08	02	2.1		B	DSO	70	17	9	3
4075		BOUL	02	02	1700	S11	W05	02	2.3		B	BXO	20	6	3	2
4075		PALE	02	02	1815	S13	W13	02	1.8		B	FSI	80	27	16	3
4075		MANI	02	03	0007	S14	W15	02	1.9			FSO	70	21	16	3
4075		LEAR	02	03	0008	S14	W14	02	1.9		B	CRO	20	18	12	3
4075		RAMY	02	03	1250	S14	W24	02	1.7		B	FAO	90	20	17	3
4075		BOUL	02	03	1610	S11	W17	02	2.4		B	BXO	10	5	4	3
4075		LEAR	02	04	0020	S13	W25	02	2.1		B	BXO	10	11	6	3
4075	23549	MWIL	02	04	1600	S13	W34	02	2.1	3	(BP)					
4075		BOUL	02	04	1630	S13	W35	02	2.0		B	CSO	30	16	5	3
4075		PALE	02	04	2005	S12	W36	02	2.1		B	CSO	40	13	7	3
4075		MANI	02	04	2341	S14	W40	02	2.0			CRO	40	9	15	3
4075		LEAR	02	05	0017	S13	W36	02	2.3		B	BXO	30	11	5	3
4075		RAMY	02	05	1320	S13	W43	02	2.3		B	CAO	10	4	3	3
4075		HOLL	02	05	1522	S13	W43	02	2.4		B	BXO	20	3	4	3
4075		PALE	02	05	1859	S14	W46	02	2.3		B	BXO	20	3	3	3
4075		LEAR	02	06	0003	S12	W48	02	2.4		B	BXO	10	2	3	3
4075		HOLL	02	06	1526	S13	W56	02	2.4		B	BXO	10	2	3	4
	23553	MWIL	01	30	1630	N17	E34	02	2.3	2	(AP)					
4077		RAMY	01	29	1241	S19	E56	02	2.8		B	BXO	20	7	6	2
4077		HOLL	01	29	1558	S18	E53	02	2.7		B	BXO	20	9	3	4
4077	23552	MWIL	01	29	1600	S19	E54	02	2.8	3	(B)					
4077		PALE	01	29	2000	S18	E52	02	2.8		B	CRO	60	12	5	3
4077	23552	MWIL	01	30	1630	S18	E40	02	2.7	4	(B)					
4077		BOUL	01	30	1645	S17	E40	02	2.7		B	DKO	310	15	5	2
4077		PALE	01	30	1906	S18	E39	02	2.8		B	DKI	310	14	5	3
4077		LEAR	01	31	0030	S17	E35	02	2.7		B	DKI	430	24	6	2
4077		RAMY	01	31	1245	S18	E29	02	2.7		BD	DKI	620	31	6	4
4077	23552	MWIL	01	31	1545	S18	E27	02	2.7	5	(D)					
4077		HOLL	01	31	1638	S17	E27	02	2.7		BD	DKC	590	33	7	3
4077		PALE	01	31	1917	S18	E26	02	2.8		BD	DKI	560	15	6	3
4077		LEAR	02	01	0040	S18	E23	02	2.8		BD	DKC	790	18	6	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem)	Spot Count	Long. Extent (Deg)	Qual
4077		MANI	02	01	0207	S18	E22	02	2.8			DKI	800	31	7	3
4077	23552	MWIL	02	01	1600	S17	E14	02	2.7	5	(D)					
4077		PALE	02	01	1850	S18	E12	02	2.7		BD	DKI	900	24	7	1
4077		MANI	02	01	2326	S18	E09	02	2.7			DKC	1060	37	7	3
4077		LEAR	02	02	0030	S17	E09	02	2.7		BD	DKC	1110	22	7	3
4077		RAMY	02	02	1330	S16	E03	02	2.8		BD	DKI	900	29	6	3
4077		HOLL	02	02	1546	S17	E01	02	2.7		BD	DKC	1190	33	7	3
4077		BOUL	02	02	1700	S16	E02	02	2.9		BD	DKI	680	31	5	2
4077		PALE	02	02	1815	S17	W01	02	2.7		BD	DKI	840	35	8	3
4077		MANI	02	03	0007	S17	W04	02	2.7			DKC	1040	35	7	3
4077		LEAR	02	03	0008	S17	W04	02	2.7		BD	DKC	840	46	7	3
4077		RAMY	02	03	1250	S17	W11	02	2.7		BD	DKI	830	36	7	3
4077		BOUL	02	03	1610	S16	W12	02	2.8		BD	DHC	700	18	8	3
4077		LEAR	02	04	0020	S16	W16	02	2.8		BD	DKC	870	25	6	3
4077	23552	MWIL	02	04	1600	S17	W26	02	2.7	5	(D)					
4077		BOUL	02	04	1630	S15	W28	02	2.6		BD	DKC	780	39	8	3
4077		PALE	02	04	2005	S17	W29	02	2.6		BD	DKI	790	31	18	3
4077		MANI	02	04	2341	S17	W30	02	2.7			DKC	860	29	7	3
4077		LEAR	02	05	0017	S17	W30	02	2.7		BD	DKC	850	36	8	3
4077		RAMY	02	05	1220	S16	W37	02	2.7		BD	DKI	790	32	7	3
4077		RAMY	02	05	1320	S16	W37	02	2.7		BD	DKI	790	32	7	3
4077		HOLL	02	05	1522	S17	W38	02	2.8		BGD	DKI	710	25	8	3
4077		PALE	02	05	1859	S18	W40	02	2.7		BGD	DKI	740	33	6	3
4077		LEAR	02	06	0003	S17	W42	02	2.8		BD	DKI	790	40	9	3
4077		HOLL	02	06	1526	S17	W51	02	2.8		BD	DKI	770	16	9	4
4077		BOUL	02	06	1700	S15	W50	02	2.9		BGD	DKI	650	16	6	3
4077		RAMY	02	06	1720	S16	W51	02	2.9		BGD	DKI	760	16	8	3
4077		PALE	02	06	1844	S17	W53	02	2.7		BD	DKI	760	19	9	4
4077		MANI	02	06	2326	S17	W56	02	2.7			DKI	1040	19	9	3
4077		LEAR	02	07	0230	S17	W58	02	2.7		B	DHI	530	7	8	2
4077		RAMY	02	07	1400	S16	W65	02	2.6		BGD	DKO	470	12	8	2
4077		HOLL	02	07	1609	S17	W65	02	2.7		BD	DKO	460	15	9	4
4077		PALE	02	07	1815	S17	W66	02	2.7		BD	DKO	410	9	8	3
4077		BOUL	02	07	1935	S15	W53	02	3.8		B	DSI	260	7	5	2
4077		LEAR	02	08	0023	S17	W68	02	2.8		BG	DHO	490	8	8	3
4077		RAMY	02	08	1240	S17	W74	02	2.9		BGD	DKO	500	8	9	3
4077		HOLL	02	08	1750	S17	W68	02	3.6		B	DAO	590	6	8	2
4077		PALE	02	08	1835	S17	W79	02	2.8		B	DKO	530	4	9	3
4077	23552	MWIL	02	08	2000	S18	W80	02	2.7	3	(B)					
4077		LEAR	02	09	0029	S17	W82	02	2.8		BG	DHO	540	5	8	3
4077		RAMY	02	09	1305	S18	W88	02	2.8		A	HKX	60	1	3	3
4077		HOLL	02	09	1556	S18	W88	02	3.0		A	HSX	70	2	2	4
4077	23552	MWIL	02	09	1600	S18	W88	02	3.0	2	AP					
	23557	MWIL	02	01	1600	S13	E23	02	3.4	3	(B)					
4080		LEAR	02	01	0040	N21	E55	02	5.2		B	BXO		2	4	3
4080		MANI	02	01	0207	S21	E54	02	5.2			BXO	10	2	4	3
4080	23554	MWIL	02	01	1600	N20	E47	02	5.3	2	(B)					
4080		HOLL	02	01	1720	N21	E43	02	5.0		A	AXX	10	3	2	3
4080		HOLL	02	06	1526	N21	W24	02	4.8		A	AXX	10	2	2	4
4080		PALE	02	06	1844	N20	W28	02	4.6		A	AXX	10	1	1	4
4080		MANI	02	06	2326	N20	W30	02	4.7			AXX	10	1		3
0001	23554	MWIL	01	31	1545	N20	E58	02	5.1	2	(AP)					
0001		HOLL	01	31	1638	N21	E58	02	5.1		A	AXX	10	2	1	3
4082		RAMY	02	03	1250	S07	E29	02	5.7		A	AXX	10	2	1	3
4082		BOUL	02	03	1610	S07	E26	02	5.6		A	AXX	10	1		3
4082		LEAR	02	04	0020	S07	E22	02	5.7		B	BXO	10	3	4	3
4082	23558	MWIL	02	04	1600	S07	E12	02	5.6	4	X					
4082		BOUL	02	04	1630	S06	E11	02	5.5		A	HRX	20	1	1	3
4082		PALE	02	04	2005	S07	E09	02	5.5		A	HRX	20	2	1	3
4082		MANI	02	04	2341	S07	E07	02	5.5			CSO	10	2	1	3
4082		LEAR	02	05	0017	S07	E07	02	5.5		A	HSX	30	2	2	3
4082		RAMY	02	05	1320	S07	W01	02	5.5		B	CAO	20	4	2	3
4082		HOLL	02	05	1522	S07	W03	02	5.4		A	AXX		1		3
4082		PALE	02	05	1859	S07	W05	02	5.4		A	AXX	10	1	1	3
4082		LEAR	02	06	0003	S07	W07	02	5.5		A	AXX	10	2	2	3
4082		HOLL	02	06	1526	S07	W13	02	5.7		B	BXO	30	7	6	4
4082		BOUL	02	06	1700	S08	W12	02	5.8		B	BXO	20	4	5	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem!)	Spot Count	Long. Extent (Deg)	Qual
4082		RAMY	02	06	1720	S06	W14	02	5.7		B	DAO	30	6	6	3
4082		PALE	02	06	1844	S07	W15	02	5.7		B	BXO	20	7	6	4
4082		MANI	02	06	2326	S07	W18	02	5.6			BXO	20	4	6	3
4082		LEAR	02	07	0230	S07	W19	02	5.7		B	BXO	20	4	5	2
4082		RAMY	02	07	1400	S06	W26	02	5.6		B	BXO	10	2	5	2
4082		HOLL	02	07	1609	S07	W27	02	5.6		B	BXO	10	2	6	4
4082		PALE	02	07	1815	S07	W28	02	5.7		B	CRO	20	4	5	3
4082		BOUL	02	07	1935	S06	W22	02	6.2		A	AXX		1		2
4082		LEAR	02	08	0023	S07	W28	02	5.9		A	AXX		1		3
4082		RAMY	02	08	1240	S06	W36	02	5.8		A	AXX	10	1	1	3
4082		HOLL	02	08	1750	S07	W39	02	5.8		A	AXX		1		2
	23559	MWIL	02	04	1600	S13	E18	02	6.0	2	AP					
4079		RAMY	01	31	1245	S16	E78	02	6.5		A	AXX	10	1	1	4
4079	23555	MWIL	01	31	1545	S16	E76	02	6.4	2	(AP)					
4079		HOLL	01	31	1638	S15	E75	02	6.4		A	AXX	10	1	1	3
4079		PALE	01	31	1917	S15	E74	02	6.4		A	AXX	10	1	1	3
4079		LEAR	02	01	0040	S16	E70	02	6.3		A	AXX		1		3
4079		MANI	02	01	0207	S15	E70	02	6.4			AXX	10	1	1	3
4079	23555	MWIL	02	01	1600	S15	E61	02	6.3	3	(AP)					
4079		HOLL	02	01	1720	S15	E61	02	6.3		A	AXX		1		3
4079		PALE	02	01	1850	S16	E61	02	6.4		A	AXX	10	1	1	1
4079		MANI	02	01	2326	S15	E57	02	6.3			AXX	10	1		3
4079		RAMY	02	02	1330	S18	E49	02	6.3		A	AXX	20	1	1	3
4079		HOLL	02	02	1546	S16	E48	02	6.3		B	CRO	20	4	4	3
4079		BOUL	02	02	1700	S17	E47	02	6.3		A	AXX	10	1	1	2
4079		PALE	02	02	1815	S17	E47	02	6.3		B	CRO	20	2	2	3
4079		MANI	02	03	0007	S17	E44	02	6.4			CRO	30	9	5	3
4079		LEAR	02	03	0008	S17	E42	02	6.2		B	BXO	10	11	6	3
4079		RAMY	02	03	1250	S18	E35	02	6.2		B	CAO	30	12	5	3
4079		BOUL	02	03	1610	S17	E33	02	6.2		B	CRO	20	7	7	3
4079		LEAR	02	04	0020	S17	E29	02	6.2		B	CRI	50	24	7	3
4079	23555	MWIL	02	04	1600	S18	E20	02	6.2	4	B					
4079		BOUL	02	04	1630	S16	E20	02	6.2		B	DAI	210	35	8	3
4079		PALE	02	04	2005	S17	E18	02	6.2		B	DAI	400	35	9	3
4079		MANI	02	04	2341	S17	E16	02	6.2			DKI	430	24	8	3
4079		LEAR	02	05	0017	S17	E14	02	6.1		B	DSI	400	44	8	3
4079		RAMY	02	05	1320	S18	E08	02	6.2		B	DKI	480	36	8	3
4079		HOLL	02	05	1522	S17	E07	02	6.2		BG	DKO	550	20	10	3
4079		PALE	02	05	1859	S18	E06	02	6.2		BG	DKO	490	32	10	3
4079		LEAR	02	06	0003	S17	E03	02	6.2		B	EKI	630	45	11	3
4079		LEAR	02	06	0003	S17	E03	02	6.2		BG	EKI	630	45	11	3
4079		HOLL	02	06	1526	S17	W07	02	6.1		BG	EKO	690	34	12	4
4079		BOUL	02	06	1700	S17	W17	02	5.4		BG	DKI	520	22	10	3
4079		RAMY	02	06	1720	S17	W08	02	6.1		BG	DKI	680	42	10	3
4079		PALE	02	06	1844	S18	W08	02	6.2		BG	EKI	660	28	11	4
4079		MANI	02	06	2326	S18	W11	02	6.1			EKI	880	32	11	3
4079		LEAR	02	07	0230	S17	W14	02	6.0		B	EKI	700	19	12	2
4079		RAMY	02	07	1400	S18	W20	02	6.1		BG	EKO	640	17	12	2
4079		HOLL	02	07	1609	S18	W21	02	6.1		BG	EKO	670	27	12	4
4079		PALE	02	07	1815	S18	W22	02	6.1		BG	EKO	750	28	12	3
4079		BOUL	02	07	1935	S16	W18	02	6.4		B	DHO	610	11	10	2
4079		LEAR	02	08	0023	S19	W25	02	6.1		B	EKO	770	16	12	3
4079		RAMY	02	08	1240	S17	W31	02	6.2		BGD	EKO	570	24	12	3
4079		HOLL	02	08	1750	S19	W34	02	6.1		B	EKO	630	17	13	2
4079		PALE	02	08	1835	S18	W34	02	6.2		B	EKO	630	20	13	3
4079	23555	MWIL	02	08	2000	S18	W35	02	6.2	5	(B)					
4079		LEAR	02	09	0029	S18	W38	02	6.1		B	EKO	690	19	12	3
4079		RAMY	02	09	1305	S18	W45	02	6.1		BD	EKO	560	10	13	3
4079		HOLL	02	09	1556	S18	W46	02	6.2		B	ESO	640	15	12	4
4079	23555	MWIL	02	09	1600	S19	W46	02	6.2	5	(B)					
4079		PALE	02	09	1915	S19	W48	02	6.1		B	EKO	600	10	12	3
4079		BOUL	02	09	1935	S18	W45	02	6.4		B	EHO	300	6	11	2
4079		RAMY	02	10	1319	S19	W59	02	6.0		B	EKO	650	14	12	2
4079		HOLL	02	10	1520	S19	W59	02	6.1		B	ESO	630	13	12	3
4079		BOUL	02	10	1600	S17	W58	02	6.3		B	DSO	280	9	10	2
4079	23555	MWIL	02	10	1730	S19	W60	02	6.1	5	(B)					
4079		PALE	02	10	1910	S18	W62	02	6.1		B	EAO	300	9	13	2
4079		LEAR	02	11	0013	S18	W65	02	6.1		B	ESO	520	10	12	3
4079		RAMY	02	11	1510	S18	W72	02	6.1		B	EKO	390	9	12	1

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem!)	Spot Count	Long. Extent (Deg)	Qual
4079		BOUL	02	11	1520	S18	W71	02	6.2		B	ERO	300	9	14	3
4079		HOLL	02	11	1543	S19	W71	02	6.2		B	EHO	310	4	12	2
4079	23555	MWIL	02	11	1645	S19	W72	02	6.2	4	(B)					
4079		PALE	02	11	1808	S18	W74	02	6.1		B	EAO	310	8	12	5
4079		LEAR	02	12	0012	S18	W77	02	6.1		B	ESO	350	7	12	4
4079		MANI	02	12	0132	S18	W78	02	6.1			EKO	180	4	12	3
4079		RAMY	02	12	1430	S19	W80	02	6.5		B	CAO	30	2	2	1
4079		HOLL	02	12	1605	S19	W81	02	6.5		B	CSO	50	3	4	4
4079		BOUL	02	12	1640	S18	W85	02	6.2		A	HHX	60	1	3	2
4079	23555	MWIL	02	12	1700	S19	W85	02	6.2	3	(AF)					
4079		PALE	02	12	1828	S20	W88	02	6.0		B	CSO	50	2	3	3
4079		LEAR	02	13	0025	S18	W82	02	6.8		A	HXX	60	1	1	3
4084		HOLL	02	08	1750	S13	W27	02	6.7		A	AXX		2	2	2
4084		PALE	02	08	1835	S13	W27	02	6.7		A	AXX		1		3
4084	23561	MWIL	02	08	2000	S13	W27	02	6.8	3	(AP)					
4084		HOLL	02	09	1556	S12	W38	02	6.8		A	AXX		1		4
4081		MANI	02	03	0007	S09	E58	02	7.4			AXX	10	1	1	3
4081		LEAR	02	03	0008	S09	E55	02	7.1		A	AXX		1		3
4081		RAMY	02	03	1250	S10	E47	02	7.1		B	DAO	30	2	4	3
4081		BOUL	02	03	1610	S09	E43	02	6.9		B	CRO	20	2	5	3
4081		LEAR	02	04	0020	S10	E40	02	7.0		B	DRO	30	5	4	3
4081	23560	MWIL	02	04	1600	S10	E31	02	7.0	4	B					
4081		BOUL	02	04	1630	S10	E30	02	6.9		B	DSO	40	2	6	3
4081		PALE	02	04	2005	S10	E28	02	6.9		B	DRO	40	6	6	3
4081		MANI	02	04	2341	S09	E27	02	7.0			DRO	30	6	4	3
4081		LEAR	02	05	0017	S10	E25	02	6.9		B	DSO	50	7	6	3
4081		RAMY	02	05	1320	S10	E18	02	6.9		B	DAO	30	6	6	3
4081		HOLL	02	05	1522	S09	E17	02	6.9		B	BXO	20	5	6	3
4081		PALE	02	05	1859	S10	E15	02	6.9		B	BXO	20	3	5	3
4081		LEAR	02	06	0003	S10	E11	02	6.8		B	CSO	20	4	5	3
4081		HOLL	02	06	1526	S09	E06	02	7.1		B	BXO	10	2	3	4
4081		BOUL	02	06	1700	S10	E06	02	7.2		A	AXX	10	1	1	3
4081		RAMY	02	06	1720	S08	E05	02	7.1		B	CAO	20	5	5	3
4081		PALE	02	06	1844	S08	E04	02	7.1		B	CRO	20	5	3	4
4081		MANI	02	06	2326	S10	E02	02	7.1			BXO	10	4	5	3
4081		LEAR	02	07	0230	S10	W01	02	7.0		B	BXO	30	8	7	2
4081		RAMY	02	07	1400	S11	W09	02	6.9		B	BXO	10	3	3	2
4081		HOLL	02	07	1609	S09	W08	02	7.1		B	BXO	10	3	7	4
4081		PALE	02	07	1815	S10	W09	02	7.1		B	CRO	40	9	9	3
4081		BOUL	02	07	1935	S08	W07	02	7.3		B	CSO	30	12	9	2
4081		LEAR	02	08	0023	S11	W12	02	7.1		B	BXO	40	9	10	3
4081		RAMY	02	08	1240	S08	W15	02	7.4		B	CAO	40	9	3	3
4081		HOLL	02	08	1750	S09	W19	02	7.3		B	CRO	30	7	3	2
4081		PALE	02	08	1835	S09	W19	02	7.3		B	DRO	40	7	3	3
4081	23560	MWIL	02	08	2000	S09	W21	02	7.3	3	(BP)					
4081		LEAR	02	09	0029	S08	W22	02	7.4		B	CSO	40	6	6	3
4081		RAMY	02	09	1305	S08	W31	02	7.2		B	CAO	20	2	2	3
4081		HOLL	02	09	1556	S09	W34	02	7.1		B	BXO	10	4	3	4
4081	23560	MWIL	02	09	1600	S09	W32	02	7.3	3	(BP)					
4081		PALE	02	09	1915	S08	W34	02	7.3		B	BXO	20	3	4	3
4081		BOUL	02	09	1935	S07	W31	02	7.5		B	BXO	20	2	3	2
		MANI	02	06	2326	S17	E02	02	7.1			AXX	10	1	1	3
0002		HOLL	02	08	1750	S14	W04	02	8.4		A	AXX	10	2	2	2
0002		PALE	02	08	1835	S12	W04	02	8.5		A	AXX	20	3	2	3
0002	23562	MWIL	02	08	2000	S12	W06	02	8.4	2	(AF)					
		HOLL	02	07	1609	N11	E13	02	8.7		A	AXX		1		4
0003		HOLL	02	09	1556	S04	W11	02	8.8		A	AXX		1		4
0003	23565	MWIL	02	09	1600	S04	W10	02	8.9	2	(AF)					
0003		PALE	02	09	1915	S04	W12	02	8.9		A	AXX		1		3
4089		MANI	02	15	0126	N16	W32	02	12.6			AXX	10	1		3
4089		RAMY	02	15	1315	N17	W38	02	12.7		A	HAX	30	1	1	3
4089		HOLL	02	15	1630	N16	W41	02	12.6		A	AXX		1		3
4089	23566	MWIL	02	15	1700	N16	W40	02	12.7	3	(B)					
4089		PALE	02	15	1850	N16	W42	02	12.6		A	AXX		1		3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4089		MANI	02	15	2349	N16	W46	02	12.5			AXX	10	1		3
4089		LEAR	02	16	0010	N14	W45	02	12.6		A	AXX	10	1		3
4083		HOLL	02	07	1609	S17	E78	02	13.6		A	AXX		1		4
4083		LEAR	02	08	0023	S17	E74	02	13.6		A	AXX		1		3
4083		RAMY	02	08	1240	S17	E69	02	13.8		A	AXX	30	1	1	3
4083		HOLL	02	08	1750	S17	E67	02	13.8		A	AXX		1		2
4083		PALE	02	08	1835	S17	E66	02	13.8		A	AXX		1		3
4083	23563	MWIL	02	08	2200	S16	E62	02	13.6	1	X					
4083		LEAR	02	09	0029	S17	E61	02	13.7		A	AXX		1		3
4083		RAMY	02	09	1305	S18	E54	02	13.7		A	AXX	20	1	1	3
4086	23564	MWIL	02	08	2200	N04	E81	02	15.0	1	AP					
4086		RAMY	02	09	1305	N02	E73	02	15.0		B	BXO	30	3	3	3
4086		HOLL	02	09	1556	N04	E70	02	14.9		B	CRO	20	3	4	4
4086	23564	MWIL	02	09	1600	N03	E71	02	15.0	3	(AP)					
4086		PALE	02	09	1915	N03	E69	02	15.0		B	CRO	30	3	3	3
4086		BOUL	02	09	1935	N02	E69	02	15.0		B	BXO	10	3	1	2
4086		RAMY	02	10	1319	N03	E59	02	15.0		B	CSO	40	3	2	2
4086		HOLL	02	10	1520	N04	E57	02	14.9		B	CSO	30	3	3	3
4086		BOUL	02	10	1600	N03	E57	02	14.9		A	HSX	20	3	2	2
4086	23564	MWIL	02	10	1730	N03	E56	02	14.9	3	(B)					
4086		PALE	02	10	1910	N03	E56	02	15.0		B	CSO	30	2	2	2
4086		LEAR	02	11	0013	N03	E53	02	15.0		B	CSO	30	6	4	3
4086		RAMY	02	11	1510	N03	E44	02	14.9		A	HSX	30	1	1	1
4086		BOUL	02	11	1520	N03	E44	02	14.9		A	AXX	10	1	1	3
4086		HOLL	02	11	1543	N03	E46	02	15.1		B	BXO	10	2	4	2
4086	23564	MWIL	02	11	1645	N03	E43	02	14.9	4	(AP)					
4086		PALE	02	11	1808	N03	E44	02	15.0		B	BXO	20	3	3	5
4086		LEAR	02	12	0012	N03	E41	02	15.1		B	CRO	30	8	4	4
4086		MANI	02	12	0132	N03	E40	02	15.1			BXO	30	3	3	3
4086		RAMY	02	12	1430	N03	E32	02	15.0		A	HAX	10	1	1	1
4086		HOLL	02	12	1605	N03	E32	02	15.1		B	BXO	20	4	4	4
4086		BOUL	02	12	1640	N03	E25	02	14.6		B	BXO	10	4	5	2
4086		BOUL	02	12	1640	N03	E30	02	14.9		B	BXO	10	4	5	2
4086	23564	MWIL	02	12	1700	N03	E30	02	15.0	3	(AP)					
4086		PALE	02	12	1828	N03	E29	02	14.9		B	BXO	20	3	3	3
4086		LEAR	02	13	0025	N03	E27	02	15.0		B	BXO	10	3	3	3
4086		RAMY	02	13	1315	N03	E21	02	15.1		B	CAO	20	6	3	3
4086		HOLL	02	13	1539	N04	E18	02	15.0		B	BXO	20	5	4	4
4086	23564	MWIL	02	13	1630	N03	E17	02	15.0	3	(AP)					
4086		BOUL	02	13	1640	N03	E18	02	15.0		B	BXO	10	4	3	3
4086		PALE	02	13	1846	N03	E17	02	15.1		B	CRO	30	9	3	4
4086		MANI	02	13	2345	N03	E14	02	15.0			CRO	20	6	3	3
4086		MANI	02	14	0001	N03	E14	02	15.0		B	CRO	20	6	3	3
4086		LEAR	02	14	0021	N03	E15	02	15.1		B	BXO	30	8	3	3
4086		RAMY	02	14	1305	N03	E07	02	15.1		B	CAO	20	2	3	3
4086		HOLL	02	14	1539	N03	E05	02	15.0		A	AXX		1	1	3
4086	23564	MWIL	02	14	1630	N03	E04	02	15.0	3	(AP)					
4086		BOUL	02	14	1800	N03	E05	02	15.1		A	AXX	10	8	4	2
4086		PALE	02	14	1831	N03	E04	02	15.1		A	AXX	10	1	1	3
4086		LEAR	02	15	0023	N03	E02	02	15.2		B	BXO	10	5	3	3
4086		MANI	02	15	0126	N03	E00	02	15.1			BXO	10	3	2	3
4086		RAMY	02	15	1315	N03	W06	02	15.1		B	BXO	10	4	3	3
4086		HOLL	02	15	1630	N03	W09	02	15.0		A	AXX		1		3
4086	23564	MWIL	02	15	1700	N03	W09	02	15.0	2	(AP)					
4086		PALE	02	15	1850	N03	W10	02	15.0		A	AXX		1		3
4086		LEAR	02	16	0010	N03	W12	02	15.1		A	AXX		2	1	3
0004		HOLL	02	09	1556	S12	E75	02	15.3		A	AXX	10	2	2	4
0004		PALE	02	09	1915	S12	E75	02	15.5		A	AXX	10	2	1	3
		HOLL	02	16	1555	N08	W14	02	15.6		A	AXX		1		3
		PALE	02	19	1818	S17	W30	02	17.5		A	AXX	10	1		3
0005		PALE	02	16	2005	S12	E16	02	18.0		A	AXX		1		2
0005		LEAR	02	17	0002	S12	E14	02	18.1		A	AXX		1		3
0005	23572A	MWIL	02	21	1630	S20	W35	02	19.0	2	(AP)					
4090		MANI	02	15	0126	S18	E65	02	20.0			BXO	10	2	2	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem)	Spot Count	Long. Extent (Deg)	Qual
4090		RAMY	02	15	1315	S17	E56	02	19.8		A	AXX	20	1	1	3
4090		HOLL	02	15	1630	S16	E55	02	19.9		B	BXO	10	2	3	3
4090	23567	MWIL	02	15	1700	S17	E55	02	19.9	2	(AP)					
4090		PALE	02	15	1850	S17	E54	02	19.9		B	BXO	10	2	3	3
4090		MANI	02	15	2349	S18	E56	02	20.3			BXO	10	3	2	3
4090		LEAR	02	16	0010	S17	E50	02	19.8		A	AXX	10	2	2	3
4090		RAMY	02	16	1318	S17	E42	02	19.7		A	AXX	10	1	1	2
4090		HOLL	02	16	1555	S16	E44	02	20.0		B	BXO	10	9	6	3
4090	23567	MWIL	02	16	1645	S16	E44	02	20.0	2	(B)					
4090		PALE	02	16	2005	S16	E43	02	20.1		A	AXX		1		2
4090		LEAR	02	17	0002	S17	E42	02	20.2		B	BXO	10	4	3	3
4090		MANI	02	17	0433	S17	E39	02	20.2			BXO	10	3	2	2
4090		BOUL	02	17	1525	S17	E30	02	19.9		B	CSO	30	8	3	3
4090		HOLL	02	17	1550	S16	E33	02	20.2		B	CRO	50	6	4	3
4090	23567	MWIL	02	17	1630	S16	E32	02	20.1	3	(B)					
4090		RAMY	02	17	1935	S17	E31	02	20.2		B	DAO	30	6	3	1
4090		MANI	02	18	0037	S16	E27	02	20.1			CRO	30	12	5	3
4090		LEAR	02	18	0152	S17	E26	02	20.1		B	DSO	80	16	5	3
4090		RAMY	02	18	1210	S17	E21	02	20.1		B	DAO	110	15	5	3
4090		HOLL	02	18	1528	S16	E19	02	20.1		B	CKO	90	11	5	3
4090	23567	MWIL	02	18	1600	S16	E19	02	20.1	3	(B)					
4090		LEAR	02	19	0019	S16	E15	02	20.2		B	BXO	80	16	6	3
4090		RAMY	02	19	1310	S16	E07	02	20.1		B	DAO	40	9	5	2
4090	23567	MWIL	02	19	1545	S16	E04	02	20.0	3	(B)					
4090		HOLL	02	19	1624	S16	E03	02	19.9		B	BXO	30	8	3	3
4090		PALE	02	19	1818	S16	E03	02	20.0		B	CRO	40	7	3	3
4090		LEAR	02	20	0022	S16	W02	02	19.9		B	BXO	40	11	3	3
4090		RAMY	02	20	1230	S16	W09	02	19.8		B	CSO	20	8	3	3
4090		HOLL	02	20	1550	S16	W10	02	19.9		B	BXO	20	5	3	3
4090		BOUL	02	20	1620	S14	W12	02	19.8		B	BXO	10	5	3	3
4090	23567	MWIL	02	20	1630	S16	W09	02	20.0	3	(B)					
4090		PALE	02	20	1808	S15	W12	02	19.8		B	CRO	30	6	3	3
4090		LEAR	02	21	0049	S17	W17	02	19.7		B	BXO	20	4	4	3
4090		RAMY	02	21	1415	S16	W24	02	19.8		A	HAX	20	1	1	3
4090		HOLL	02	21	1510	S15	W23	02	19.9		A	AXX	10	2	2	4
4090	23567	MWIL	02	21	1630	S17	W22	02	20.0	3	(B)					
4090		BOUL	02	21	1715	S15	W25	02	19.8		A	AXX	10	1		3
4090		PALE	02	21	1915	S16	W27	02	19.8		A	AXX	10	2	1	3
4091		HOLL	02	16	1555	S11	E79	02	22.6		A	HSX	20	1	1	3
4091	23568	MWIL	02	16	1645	S12	E80	02	22.7	3	(AP)					
4091		PALE	02	16	2005	S11	E79	02	22.8		A	HSX	20	1	1	2
4091		LEAR	02	17	0002	S12	E75	02	22.7		A	HSX	60	1	1	3
4091		MANI	02	17	0433	S10	E78	02	23.1			HSX		1	1	2
4091		BOUL	02	17	1525	S13	E65	02	22.6		A	HSX	40	1	1	3
4091		HOLL	02	17	1550	S12	E67	02	22.7		A	HSX	70	1	2	3
4091	23568	MWIL	02	17	1630	S12	E68	02	22.8	3	(AP)					
4091		RAMY	02	17	1935	S13	E65	02	22.7		A	HAX	50	1	1	1
4091		MANI	02	18	0037	S11	E62	02	22.7			HSX	60	1	1	3
4091		LEAR	02	18	0152	S12	E61	02	22.7		A	HSX	80	1	1	3
4091		RAMY	02	18	1210	S13	E56	02	22.7		A	HAX	50	1	1	3
4091		HOLL	02	18	1528	S13	E54	02	22.7		A	HSX	30	1	2	3
4091	23568	MWIL	02	18	1600	S12	E53	02	22.7	3	(AP)					
4091		LEAR	02	19	0019	S12	E48	02	22.6		A	HSX	60	1	2	3
4091		RAMY	02	19	1310	S13	E41	02	22.6		A	HSX	50	1	1	2
4091	23568	MWIL	02	19	1545	S12	E39	02	22.6	3	(AP)					
4091		HOLL	02	19	1624	S12	E39	02	22.6		A	HSX	50	1	2	3
4091		PALE	02	19	1818	S12	E38	02	22.6		A	HSX	30	1	1	3
4091		LEAR	02	20	0022	S12	E35	02	22.7		A	HSX	40	1	1	3
4091		RAMY	02	20	1230	S14	E28	02	22.6		A	HAX	50	1	1	3
4091		HOLL	02	20	1550	S12	E26	02	22.6		A	HSX	40	1	2	3
4091		BOUL	02	20	1620	S12	E26	02	22.6		A	HSX	50	1	2	3
4091	23568	MWIL	02	20	1630	S13	E26	02	22.7	4	(AP)					
4091		PALE	02	20	1808	S12	E26	02	22.7		A	HSX	40	1	2	3
4091		LEAR	02	21	0049	S13	E22	02	22.7		A	HSX	40	2	2	3
4091		RAMY	02	21	1415	S13	E14	02	22.7		A	HAX	20	1	1	3
4091		HOLL	02	21	1510	S12	E13	02	22.6		A	HSX	30	2	2	4
4091	23568	MWIL	02	21	1630	S13	E13	02	22.7	4	(AP)					
4091		BOUL	02	21	1715	S13	E12	02	22.6		A	HSX	20	1	1	3
4091		PALE	02	21	1915	S12	E11	02	22.6		A	HSX	20	2	1	3
4091		LEAR	02	22	0026	S12	E08	02	22.6		A	HSX	20	1	1	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4091		BOUL	02	22	1430	S12	E01	02	22.7		A	AXX	10	1	1	3
4091		RAMY	02	22	1435	S14	E02	02	22.8		B	CSO	40	4	3	1
4091	23568	MWIL	02	22	1545	S13	E01	02	22.7	3	(AP)					
4091		HOLL	02	22	1546	S12	W00	02	22.7		A	AXX		1		3
4091		LEAR	02	23	0020	S13	W05	02	22.6		A	AXX		1		3
4091		RAMY	02	23	1248	S12	W11	02	22.7		B	BXO	20	3	2	2
4091		HOLL	02	23	1540	S13	W12	02	22.7		A	AXX		1		3
4095		MANI	02	18	0037	S11	E67	02	23.1			BXO	10	4	2	3
4095		BOUL	02	21	1715	S11	E21	02	23.3		A	AXX	10	1		3
4095		PALE	02	21	1915	S10	E20	02	23.3		A	AXX	10	1		3
4095		LEAR	02	22	0026	S09	E17	02	23.3		A	AXX		1		3
4095		LEAR	02	24	0016	S09	W12	02	23.1		A	AXX		1		3
4095		HOLL	02	27	1530	S11	W67	02	22.6		A	AXX	10	2	2	4
4095		BOUL	02	27	1700	S10	W64	02	22.9		B	BXO	30	2	1	4
4095		RAMY	02	27	1809	S12	W65	02	22.9		B	BXO	40	6	5	1
4095		PALE	02	27	1815	S12	W68	02	22.6		B	BXO	30	3	5	3
4095		LEAR	02	28	0015	S11	W67	02	23.0		B	CRO	80	4	3	3
4095		RAMY	02	28	1313	S09	W75	02	22.9		B	BXO	10	3	7	2
4095		BOUL	02	28	1520	S09	W75	02	23.0		A	AXX	10	1		3
4095		HOLL	02	28	1522	S11	W75	02	23.0		A	AXX	20	1	1	4
4095		PALE	02	28	1925	S10	W79	02	22.9		A	AXX	10	1		3
4095		LEAR	03	01	0125	S11	W85	02	22.7		A	HSX	60	1	1	3
0006	23570	MWIL	02	20	1630	S11	E38	02	23.5	3	(B)					
0006		RAMY	02	21	1415	S11	E23	02	23.3		A	AXX	10	1	1	3
0006		HOLL	02	21	1510	S09	E23	02	23.4		A	AXX		1		4
0006	23570	MWIL	02	21	1630	S10	E22	02	23.3	3	(AP)					
	23573	MWIL	02	21	1630	N06	E23	02	23.4	3	(AP)					
4092		BOUL	02	17	1525	S10	E80	02	23.7		A	HSX	30	1	1	3
4092		HOLL	02	17	1550	S08	E86	02	24.1		A	HSX	140	1	4	3
4092		RAMY	02	17	1935	S10	E81	02	23.9		A	HAX	110	1	2	1
4092		MANI	02	18	0037	S08	E80	02	24.0			HSX	230	1	2	3
4092		MANI	02	18	0037	S09	E80	02	24.0			AXX	10	1		3
4092		LEAR	02	18	0152	S09	E78	02	23.9		A	HSX	140	1	2	3
4092		RAMY	02	18	1210	S10	E73	02	24.0		A	HSX	140	1	2	3
4092		HOLL	02	18	1528	S08	E74	02	24.2		A	HHX	140	1	3	3
4092	23569	MWIL	02	18	1600	S09	E70	02	23.9	3	(AP)					
4092		LEAR	02	19	0019	S08	E66	02	24.0		A	HSX	140	1	2	3
4092		RAMY	02	19	1310	S10	E60	02	24.1		A	HAX	160	1	2	2
4092	23569	MWIL	02	19	1545	S09	E58	02	24.0	3	(AP)					
4092		HOLL	02	19	1624	S09	E57	02	24.0		A	HSX	170	1	2	3
4092		PALE	02	19	1818	S09	E57	02	24.0		A	HSX	110	1	2	3
4092		LEAR	02	20	0022	S08	E53	02	24.0		A	HSX	150	1	2	3
4092		RAMY	02	20	1230	S11	E46	02	24.0		A	HAX	90	1	2	3
4092		HOLL	02	20	1550	S09	E44	02	24.0		A	HSX	120	1	2	3
4092		BOUL	02	20	1620	S09	E42	02	23.8		A	HSX	130	1	2	3
4092	23569	MWIL	02	20	1630	S08	E44	02	24.0	4	(AP)					
4092		PALE	02	20	1808	S09	E43	02	24.0		A	HSX	120	1	2	3
4092		LEAR	02	21	0049	S08	E40	02	24.0		A	HSX	170	1	2	3
4092		RAMY	02	21	1415	S09	E32	02	24.0		A	HKX	110	1	2	3
4092		HOLL	02	21	1510	S09	E32	02	24.0		A	HSX	130	1	2	4
4092	23569	MWIL	02	21	1630	S08	E31	02	24.0	5	(AP)					
4092		BOUL	02	21	1715	S09	E30	02	24.0		A	HSX	110	1	2	3
4092		PALE	02	21	1915	S09	E29	02	24.0		A	HSX	100	1	2	3
4092		LEAR	02	22	0026	S08	E27	02	24.0		A	HSX	140	1	2	3
4092		BOUL	02	22	1430	S09	E18	02	24.0		A	HSX	100	1	2	3
4092		RAMY	02	22	1435	S08	E19	02	24.0		A	HSX	140	1	2	1
4092	23569	MWIL	02	22	1545	S08	E18	02	24.0	5	(AP)					
4092		HOLL	02	22	1546	S08	E17	02	23.9		A	HSX	140	1	2	3
4092		LEAR	02	23	0020	S09	E13	02	24.0		A	HSX	150	1	2	3
4092		RAMY	02	23	1248	S08	E08	02	24.1		A	HSX	100	1	2	2
4092		BOUL	02	23	1438	S08	E06	02	24.1		A	HSX	100	1	2	3
4092		HOLL	02	23	1540	S08	E06	02	24.1		A	HSX	120	1	2	3
4092		PALE	02	23	1919	S09	E03	02	24.0		A	HSX	120	1	2	4
4092		LEAR	02	24	0016	S09	E01	02	24.1		A	HSX	140	1	2	3
4092		RAMY	02	24	1345	S08	W08	02	24.0		A	HAX	140	1	2	2
4092		BOUL	02	24	1500	S08	W07	02	24.1		B	CSO	110	3	7	3
4092		PALE	02	24	1811	S09	W10	02	24.0		A	HSX	110	1	2	4

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4092		HOLL	02	24	2216	S08	W12	02	24.0		A	HSX	120	1	2	3
4092		LEAR	02	25	0027	S08	W13	02	24.0		A	HSX	120	1	2	3
4092		BOUL	02	25	1535	S08	W20	02	24.1		A	HSX	70	1	2	3
4092		HOLL	02	25	1812	S08	W22	02	24.1		A	HSX	100	1	2	4
4092		PALE	02	25	1825	S08	W22	02	24.1		A	HSX	80	1	2	4
4092		LEAR	02	26	0018	S08	W26	02	24.1		A	HSX	80	1	2	2
4092		RAMY	02	26	1310	S07	W33	02	24.1		A	HKX	90	1	3	3
4092		BOUL	02	26	1615	S08	W34	02	24.1		A	HSX	100	1	2	3
4092	23569	MWIL	02	26	1830	S08	W36	02	24.1	5	(AP)					
4092		HOLL	02	26	1830	S08	W37	02	24.0		A	HSX	110	1	2	3
4092		PALE	02	26	1901	S08	W36	02	24.1		A	HSX	90	1	2	3
4092		LEAR	02	27	0020	S08	W39	02	24.1		A	HSX	100	1	2	3
4092		HOLL	02	27	1530	S08	W48	02	24.0		A	HSX	100	1	2	4
4092		BOUL	02	27	1700	S08	W48	02	24.1		A	HSX	80	1	2	4
4092		RAMY	02	27	1809	S08	W49	02	24.1		A	HAX	60	1	2	1
4092		PALE	02	27	1815	S08	W50	02	24.0		A	HSX	90	1	2	3
4092		LEAR	02	28	0015	S08	W52	02	24.1		A	HSX	110	1	2	3
4092		RAMY	02	28	1313	S08	W60	02	24.0		A	HAX	60	1	2	2
4092		BOUL	02	28	1520	S08	W60	02	24.1		A	HSX	60	1	1	3
4092		HOLL	02	28	1522	S08	W61	02	24.1		A	HSX	120	1	2	4
4092		PALE	02	28	1925	S08	W63	02	24.1		A	HSX	70	1	1	3
4092		LEAR	03	01	0125	S08	W67	02	24.0		A	HSX	60	1	1	3
4092		RAMY	03	01	1349	S07	W74	02	24.0		A	HAX	60	1	2	2
4092		PALE	03	01	1815	S08	W77	02	24.0		A	HSX	70	1	2	4
4092		HOLL	03	01	1920	S08	W77	02	24.0		A	HSX	30	1	2	3
4092		MANI	03	02	0010	S09	W80	03	24.0			HSX	100	1	2	3
		HOLL	02	24	2216	S12	W07	02	24.4		A	AXX		1		3
		PALE	02	24	1811	S13	E05	02	25.1		A	AXX	10	1	1	4
4100		BOUL	02	25	1535	S08	W03	02	25.4		B	CRO	40	6	5	3
4100		HOLL	02	25	1812	S08	W06	02	25.3		B	BXO	40	5	4	4
4100		PALE	02	25	1825	S08	W05	02	25.4		B	BXO	40	5	5	4
4100		LEAR	02	26	0018	S08	W09	02	25.3		B	DSO	40	3	5	2
4100		RAMY	02	26	1310	S08	W17	02	25.3		B	DAO	40	4	6	3
4100		BOUL	02	26	1615	S08	W18	02	25.3		B	CRO	20	5	7	3
4100		HOLL	02	26	1830	S08	W20	02	25.3		B	CRO	40	6	6	3
4100	23574	MWIL	02	26	1830	S08	W20	02	25.3	4	(B)					
4100		PALE	02	26	1901	S08	W20	02	25.3		B	DSO	50	10	7	3
4100		LEAR	02	27	0020	S08	W23	02	25.3		B	CSO	40	8	7	3
4100		HOLL	02	27	1530	S08	W32	02	25.2		B	DSO	50	7	7	4
4100		BOUL	02	27	1700	S08	W33	02	25.2		B	DSO	80	6	7	4
4100		RAMY	02	27	1809	S08	W35	02	25.1		B	DSO	100	6	8	1
4100		PALE	02	27	1815	S08	W35	02	25.1		B	DSO	50	6	8	3
4100		LEAR	02	28	0015	S08	W38	02	25.2		B	DSO	60	12	8	3
4100		RAMY	02	28	1313	S08	W46	02	25.1		B	CSO	160	11	9	2
4100		BOUL	02	28	1520	S09	W44	02	25.3		B	CRO	30	7	8	3
4100		HOLL	02	28	1522	S08	W47	02	25.1		B	CRO	50	7	8	4
4100		PALE	02	28	1925	S08	W49	02	25.1		B	DRO	60	4	8	3
4100		LEAR	03	01	0125	S09	W54	02	25.0		B	CSO	30	4	10	3
4100		RAMY	03	01	1349	S09	W59	02	25.1		B	DAO	100	5	10	2
4100		PALE	03	01	1815	S09	W62	02	25.1		B	CRO	60	5	9	4
4100		HOLL	03	01	1920	S08	W62	02	25.2		B	BXO	10	2	8	3
4100		RAMY	03	02	1415	S08	W72	02	25.2		B	CAO	30	2	9	3
4100		BOUL	03	02	1615	S09	W74	02	25.1		B	BXO	10	3	5	2
4100		PALE	03	02	1829	S09	W76	02	25.1		B	CSO	30	4	8	4
	23575	MWIL	02	26	1830	N16	W17	02	25.5	3	(B)					
4094		HOLL	02	20	1550	N14	E68	02	25.8		A	AXX	10	1	1	3
4094		BOUL	02	20	1620	N13	E67	02	25.7		A	HRX	20	1	2	3
4094	23571	MWIL	02	20	1630	N15	E69	02	25.9	3	(AP)					
4094		PALE	02	20	1808	N15	E66	02	25.8		A	AXX	20	1	1	3
4094		LEAR	02	21	0049	N15	E64	02	25.9		A	AXX	10	2	2	3
4094		RAMY	02	21	1415	N13	E57	02	25.9		B	DAO	120	5	4	3
4094		HOLL	02	21	1510	N14	E57	02	25.9		B	DSO	80	5	4	4
4094	23571	MWIL	02	21	1630	N15	E56	02	25.9	4	(B)					
4094		BOUL	02	21	1715	N14	E54	02	25.8		B	DAO	90	5	4	3
4094		PALE	02	21	1915	N15	E54	02	25.9		B	DAO	120	7	5	3
4094		LEAR	02	22	0026	N15	E51	02	25.9		B	CAO	100	3	4	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

FEBRUARY 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem)	Spot Count	Long. Extent (Deg)	Qual
4094		BOUL	02	22	1430	N13	E42	02	25.8		B	DAO	80	3	5	3
4094		RAMY	02	22	1435	N16	E43	02	25.9		B	DAO	100	4	5	1
4094	23571	MWIL	02	22	1545	N14	E42	02	25.8	5	(B)					
4094		HOLL	02	22	1546	N15	E43	02	25.9		B	DAO	60	8	6	3
4094		LEAR	02	23	0020	N15	E37	02	25.8		B	DSO	80	8	5	3
4094		RAMY	02	23	1248	N14	E31	02	25.9		B	CAO	60	4	5	2
4094		BOUL	02	23	1438	N14	E27	02	25.7		B	CSO	40	4	5	3
4094		HOLL	02	23	1540	N15	E28	02	25.8		B	DSO	60	7	5	3
4094		PALE	02	23	1919	N15	E27	02	25.9		B	CAO	50	10	5	4
4094		LEAR	02	24	0016	N14	E24	02	25.8		B	DAO	110	11	6	3
4094		RAMY	02	24	1345	N15	E16	02	25.8		B	DAO	70	13	6	2
4094		BOUL	02	24	1500	N13	E15	02	25.8		B	CRI	40	13	6	3
4094		PALE	02	24	1811	N14	E13	02	25.7		B	CAI	50	14	6	4
4094		HOLL	02	24	2216	N14	E12	02	25.8		B	CSO	70	13	7	3
4094		LEAR	02	25	0027	N14	E10	02	25.8		B	DSO	60	10	6	3
4094		BOUL	02	25	1535	N13	E02	02	25.8		B	CRI	30	10	5	3
4094		HOLL	02	25	1812	N13	W01	02	25.7		B	CSO	50	6	5	4
4094		PALE	02	25	1825	N13	E01	02	25.8		B	CRO	40	10	6	4
4094		LEAR	02	26	0018	N13	W03	02	25.8		B	DSO	60	9	7	2
4094		RAMY	02	26	1310	N13	W09	02	25.9		B	DAO	60	15	8	3
4094		BOUL	02	26	1615	N13	W11	02	25.8		B	CRI	40	12	12	3
4094		HOLL	02	26	1830	N13	W13	02	25.8		B	CSO	60	10	7	3
4094	23571	MWIL	02	26	1830	N13	W14	02	25.7	4	(B)					
4094		PALE	02	26	1901	N14	W14	02	25.7		B	CSO	60	13	7	3
4094		LEAR	02	27	0020	N13	W16	02	25.8		B	CSO	40	11	8	3
4094		HOLL	02	27	1530	N13	W27	02	25.6		B	BXO	50	10	8	4
4094		BOUL	02	27	1700	N11	W25	02	25.8		B	BXO	40	11	8	4
4094		RAMY	02	27	1809	N13	W28	02	25.6		B	BXO	60	10	4	1
4094		PALE	02	27	1815	N13	W28	02	25.6		B	BXO	40	8	8	3
4094		LEAR	02	28	0015	N13	W32	02	25.6		B	CSO	40	7	5	3
4094		RAMY	02	28	1313	N13	W40	02	25.5		B	CAO	60	5	6	2
4094		BOUL	02	28	1520	N12	W38	02	25.8		B	BXO	20	3	4	3
4094		HOLL	02	28	1522	N12	W41	02	25.5		B	BXO	20	4	5	4
4094		PALE	02	28	1925	N12	W42	02	25.6		B	BXO	20	4	6	3
4094		LEAR	03	01	0125	N12	W47	02	25.5		B	BXO	20	4	5	3
4094		RAMY	03	01	1349	N12	W56	02	25.4		A	AXX	10	1	1	2
4094		PALE	03	01	1815	N12	W59	02	25.3		A	AXX	10	1	1	4
4094		MANI	03	02	0010	N13	W60	02	25.5			AXX	10	1		3
4096		LEAR	02	22	0026	N22	E56	02	26.3		A	AXX		1		3
4096	23572B	MWIL	02	22	1545	N22	E46	02	26.2	3	(B)					
4096		HOLL	02	22	1546	N22	E47	02	26.3		B	BXO	10	3	4	3
4096		LEAR	02	23	0020	N21	E39	02	26.0		A	AXX		1		3
4101		HOLL	02	25	1812	N16	E07	02	26.3		A	AXX	10	3	2	4
4101		PALE	02	25	1825	N16	E07	02	26.3		B	BXO	20	3	3	4
4101		LEAR	02	26	0018	N17	E03	02	26.2		B	BXO	10	3	3	2
4101		RAMY	02	26	1310	N16	W03	02	26.3		A	AXX	10	1	1	3
4101		HOLL	02	26	1830	N16	W06	02	26.3		A	AXX		1		3
4101		PALE	02	26	1901	N16	W06	02	26.3		A	AXX	10	2	1	3
4101		LEAR	02	27	0020	N16	W08	02	26.4		A	AXX		1		3
	23576	MWIL	02	26	1830	S21	E12	02	27.7	2	(AF)					
0007		HOLL	02	25	1812	S14	E41	02	28.9		A	AXX	10	1		4
0007	23577	MWIL	02	26	1830	S13	E27	02	28.8	2	(AP)					
0007		HOLL	02	26	1830	S14	E28	02	28.9		A	AXX		1		3

SUDDEN IONOSPHERIC DISTURBANCES

February 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
01	0212	0220	0235	1-	3			1	1		0214	No data
01	0724	0752	0902	1-	1			1			0727	No data
01	1059	1102	1115	1-	1				1		1056	X-ray
01	1857	1915	2000	1	3					6	NF	
02	1052	1100	1150	1-	1			1			1047	No date
03	0125	0130	0140U	1-	3			1	1		0126	4077
03	0204	0208	0214U	1-	3			1	1		0202	X-ray
03	0300	0305	0313	1-	3			1	1		0302	4077
03	0546	0610	1002	3+	5	2		1	1	2	0544	4077
03	1830	1839	1930	1	3				1	4	1839E	4077
04	0132	0136	0142U	1-	3			1	1		0133	4077
04	0230		0300	1-	1		1				NF	
04	0650		0700	1-	1		1				0701	X-ray
04	1752	1807	1840	1	3	1				9	*	
04	1845	1852	1900	1-	3					3	1852	X-ray
04	1907	1915	2030	2	3	1				1	*	
04	2242	2244	2306	1-	1			1			2240	X-ray
05	0035	0044	0122	1-	3		1	1			0032	4079
05	0436	0444	0545	1-	3		1	2			0435	No data
05	0700	0703	0743	1-	5			1	2	1	0700	4075
05	0730		0800	1-	1		1				0729	4077
05	0932	0940	1035	1+	5		2	1	2		0930	4077
05	1313	1317	1330	1-	1					1	NF	
05	1339	1348	1410	2	3	1	2	1	1	2	NF	
05	1740	1752	1900	1	3					12	1746	4079
05	1911	1917	1935	1-	1					1	1911	X-ray
06	0513	0522	0612	1-	3			1	2	1	0516	No data
06	0619	0646	0730	1-	1			1			NF	
06	1345	1401	1515	1	3					2	*	
07	0430		0500	1-	1		1				NF	
07	1508	1526	1630	2+	1	1					*	
08	1750	1803	1845	1-	3					6	NF	
08	2239	2346	0216	1-	1			1			2241	4077
09	0527	0615	0730	1	1					1	NF	
09	0714	0724	0752	1-	1			1			*	
09	1736	1750	1815	1-	3					3	*	
09	2011	2020	2300	2+	3					7	*	
09	2217	2229	2346	1-	1			1			2215	X-ray
10	1727	1743	1940	1+	3	1				5	NF	
10	2203	2221	2300	1	1	1					NF	
10	2232	2245	2330	1+	3					3	NF	
11	0804	0815	0845	1-	1					1	NF	
11	1435	1458	1515	1	3					2	1440	4081
11	1730	1736	1800	1-	1	1					NF	
11	1816	1832	2000	2	3	1				2	NF	
11	2029	2111	2145	1+	3					2	NF	
11	2115	2145	2245	1+	1	1					NF	
12	0716	0726	0810	1-	3			1	1		0712	X-ray
12	1310	1315	1414	1	1			1			*	
12	1843	1855	1930	1	3					2	NF	
12	2030	2050	2200	2	1	1					2050E	No data
13	2115	2128	2200	1-	3	1				5	*	
14	1207	1230	1348	1-	1			1			NF	

SUDDEN IONOSPHERIC DISTURBANCES

February 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
15	1823	1900	1945	1+	1	1					NF	
16	0513	0521	0554	1-	1			1			*	
17	0253	0300	0310	1-	1				1		NF	
17	1810	1823	1915	1+	3					4	NF	
19	0505	0508	0519	1-	1				1		NF	
19	1306	1326	1400	1	3					2	NF	
20	2147	2200	2217	1-	1			1			NF	
21	1929	1936	2015	1-	1	1					*	
22	0308	0312	0323U	1-	1				1		NF	
22	1927	1938	2018	2	5	2		1		11	1920	X-ray
22	1959	2003	2004	1-	1	1					NF	
23	1600	1615	1700	1+	3					3	NF	
23	1845	1900	1945	1-	1	1					NF	
23	2105	2112	2142	1-	3			1		3	2103	4098
24	0117	0122	0153	1-	1			1		6	NF	
24	1846	1858	1915	1-	3						1845	4098
25	0237	0250	0326	1-	3			1	1		0235	X-ray
25	1509	1526	1600	1	3					2	*	
25	1629	1641	1655	2	1	1					*	
25	2031	2045	2115	1-	3	1				6	2029	4098
26	0624	0631	0712	1-	3			1	1		0619	X-ray
27	0325	0329	0340U	1-	1				1		0330	4098
27	0452	0456	0502D	1-	1				1		NF	
27	0640	0644	0652D	1-	3			1	1		0638	No data
27	2154	2207	2245	1-	3	1		1		2	2152	4102
28	0000	0004	0044	1-	1			1			NF	
28	2250	2301	2342	1-	3			1		1	2246	X-ray
28	2312	2320	2350	1-	1			1			NF	

* = No Flare Patrol
NF = No Flare Reported
X-ray = Event observed only at X-ray wavelengths

OBSERVATORIES REPORTING FOR FEBRUARY 1983*

Darmstadt, GFR (DA)	SWF	Louisville, Kentucky, USA (A26)	SES
Durham, North Carolina, USA (A54)	SES	Maui, Hawaii, USA (MI)	SWF
Edenvale, South Africa (A52)	SES	Mayfield Village, Ohio, (USA) (A28)	SES
Frenchtown, Montana, USA (A56)	SES	Missoula, Montana, USA (A31)	SES, SWF
Hiraiso, Japan (HI)	SWF	Panska Ves, Czechoslovakia (PU)	SEA, SWF
Hobart, Tasmania, Australia (TA)	SEA	Paterson, New Jersey, USA (A46)	SES
Houston, Texas, USA (A50)	SES	Portage, Michigan, USA (A51)	SES
Huancayo, Peru (HU)	SWF	Travares, Florida, USA (A49)	SES
Inubo, Japan (IN)	SPA	Tucson, Arizona, USA (A9)	SES
Juliusruh, GDR (JU)	SWF	Upice, Czechoslovakia (UI)	SEA
Kasugai, Japan (KA)	SPA	Valley Cottage, New York, USA (A01)	SES
Kuhlungsborn, GDR (KU)	SPA, SEA	Vsetin, Czechoslovakia (VS)	SEA
Latrobe, Pennsylvania, USA (A19)	SES	Walla Walla, Washington, (USA) (A55)	SES
Lintong, China (LT)	SPA		

*Observations are not necessarily continuous for each reporting station.

SIDs by NOAA/SESC REGION

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Region Number																													
4075					1																								
4077			4	1	2			1																					
4079					2																								
4081											1																		
4098																							1	1	1		1		
4102																											1		
X-Ray	1		1	3	1				1			1										1			1	1		1	
No Flare	1			1	2	1	1	1	1	3	5	1		1	1		2		2	1		2	2	1			1	2	
No Flare Patrol				2		1	1		3			1	1			1					1				2				
No Data	2	1			1	1						1																	
Event Totals	4	1	5	7	9	3	2	2	5	3	6	4	1	1	1	1	2		2	1	1	3	3	2	4	1	4	3	

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
01	0000	0710	CULG				0106.0	0118.5	1				III N
			LEAR				0118.1	0118.3	1				III
			LEAR				0253.3	0301.6	1				III
			CULG				0254.0		1				III G
			CULG				0308.0	0308.5	2				III G
			LEAR				0308.0	0308.6	1				III
			CULG				0404.0		1				III B
			CULG				0444.5	0702.0	1				III N
			LEAR				0610.5	0610.6	1				III
			LEAR				0716.8	0719.8	1				III
	0718	0755	CULG				0719.0	0720.0	2				III B
	0805	1520	BLEN				0903.0	0925.0	1				I
	0725	1543	WEIS				1132.4	1133.2	2				III GU
			WEIS				1525.9	1526.7	2				III G
			CULG	2045.5	2136.0	2							
	2045	2400	CULG				2045.5	2306.5	2				IS,C,DC
			CULG	2139.0	2322.0	1							IN,C
			CULG				2153.5	2358.0	1				III N
			LEAR				2230.0	0400.0	1				CONT
			CULG				2306.5	2400.0	1				IS,C,DC
02			CULG				0000.0	0047.0					III S,W
	0000	0745	CULG				0000.0	0059.5	1				IS,DC
			CULG	0019.5	0732.0	1	0059.5	0707.5	1				IN
			CULG				0045.5	0321.0	1				III N
	0805	1520	BLEN										
	0721	1127	WEIS				0814.0	1537.0	1				IS
	1135	1540	WEIS				0936.3	0936.6	1				III B
	2045	2400	CULG	2054.0	2400.0	1							IS
			CULG				2120.5	2222.0	1				IN
03	0000	0746	CULG	0000.0	0310.0								IS,W
			CULG	0310.0	0600.0	1							IN
			LEAR				0330.0	0330.3	1				III
			LEAR				0537.3	0602.6	2				G
			CULG				0540.0	0550.0	3	0542.0	0544.5	2	III GG
			CULG				0556.5	0602.0	1				
			CULG	0558.0	0740.0	2							IV
			CULG							0600.5	0640.0	1	SWF
			CULG				0602.5	0628.5	3	0605.0	0627.5	3	II H
			CULG				0602.5	0746.0	3				IV
			LEAR				0602.6	0613.5	3				II
			LEAR				0604.0	1052.0	3				IV
			WEIS				0731.0E	0924.0	3				IV
			WEIS				0731.0E	0947.0	3				IV P
	0805	1525	BLEN				0805.0E	1005.0	3				
	0731	1545	WEIS				0900.0	1545.0	2				III S
			WEIS				1054.5	1056.9	3				III GG
			WEIS				1101.1	1102.7	2				III G
			WEIS				1140.1	1143.2	3				III GG
			WEIS				1222.4	1225.4	3				III G
			WEIS				1309.0	1311.3	3				III GG
			WEIS				1312.9	1313.5	2				III G
			WEIS				1402.4	1402.9	3				III G
			CULG				2046.0	2400.0	1				IS,C,DC
	2046	2400	CULG				2046.0	2400.0	1				III S
			CULG				2102.5	2152.5	2				III N
			LEAR				2223.0	0226.6	1				CONT
04			CULG				0000.0	0029.5					III S,W
	0000	0745	CULG				0000.0	0216.0	2				IS,C,DC
			CULG				0025.5	0709.0	1	0041.0	0438.5	1	III N
			CULG	0056.0	0745.5	1							IN
			CULG				0216.0	0745.5	3				IS,C,DC
			CULG				0226.5	0722.5	2				III N
			LEAR				0226.6	1052.0	2				CONT
			CULG	0422.5	0423.0	2							III G
	0805	1545	BLEN				0505.0E	1545.0D	3				IC,DC
			CULG	0527.0	0530.0	2							III G,N
	0725	1503	WEIS				0742.0	1503.0	3				IS
	1539	1548	WEIS				0900.0	1548.0	2				III N

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
04	2058	2400	CULG				2058.5	2400.0	1				IS,C,DC
			CULG				2059.0	2400.0	1	2104.5	2358.5	2	IIIS
			CULG				2102.5	2329.5	2				IIIN
			CULG	2159.5	2358.5	1							IN
			LEAR				2224.0	1051.0	1				CONT
05			CULG				0001.5	0735.0	1	0001.5	0557.0	1	IIIN
	0000	0746	CULG	0006.0	0215.0	1	0000.0	0746.0	1				IS,C,DC
			CULG	0215.0	0742.0	1							IN
			LEAR				0558.0	0600.0	2				III
			CULG	0558.5	0559.0	1	0558.5	0600.0	3	0558.5	0559.5	2	IIIG
			LEAR				0611.3	0612.0	2				III
			CULG				0611.5	0612.0	3	0611.5	0612.0	3	IIIG
			LEAR				0701.3	0703.0	2				III
			CULG				0701.5	0703.0	3	0701.5	0703.0	2	IIIG,V
			CULG				0712.0	0712.5	3	0712.0	0712.5	2	IIIB,V
	0723	1550	WEIS				0727.0	1521.0	3				IS,DC
			WEIS				0904.0	1537.0	2				IIIN
			WEIS				0931.7	0935.6	3				IIIGG
			LEAR				0931.8	0934.5	1				III
			WEIS				0957.0	1041.0	2				
			WEIS				1027.7	1028.3	2				IIIG
			WEIS				1207.0	1207.0	3				IIIG
			WEIS				1521.0	1550.0	2				I
	2047	2400	CULG				2047.0	2400.0	1				IS,DC
			CULG				2048.0	2050.0	2				IIIG
			CULG	2132.5	2400.0	1							IN
06	0000	0746	CULG				0000.0	0746.0	1				IS,DC
			CULG				0020.0	0215.0	2				
			CULG	0042.0	0140.0	1							IN
			LEAR				0418.8	0423.0	1				III
			CULG				0419.0	0425.0	2				DC
			CULG				0419.5	0424.0	1				IIIGG
			CULG				0541.5	0746.0	2				
			CULG	0619.0	0746.0	1							IS
			LEAR				0646.0	1051.0	1				CONT
	0722	1552	WEIS				1307.0	1307.2	1				IIIB
			WEIS				1535.7	1535.8	1				IIIB
	2056	2400	CULG	2131.0	2347.5	1							IS
			CULG	2155.5	2156.0	2	2155.5	2156.5	2				IIIG
07	0000	0746	CULG	0111.0	0157.5	1							IS
			LEAR				0211.6	0212.3	1				III
			LEAR				0319.8	0320.1	1				III
			LEAR				0527.3	0527.6	1				III
	0720	1021	WEIS				0823.0	1313.0	1				IN
	1037	1553	WEIS				1138.1	1138.2	1				IIIB
			WEIS				1425.2	1425.8	2				IIIG
			WEIS				1431.4	1431.6	1				IIIB
			WEIS				1500.3	1501.7	1				IIIG,U
	2046	2400	CULG	2046.0	2400.0	1	2046.0	2220.0	1				IS,DC
			CULG				2220.0	2359.0	1				IN
08	0000	0746	CULG	0000.0	0145.0	1							IS
			CULG				0006.0	0247.5	1				IN
			LEAR				0038.1	0038.3	1				III
			CULG				0116.0	0122.0	1				IIIN
			LEAR				0117.6	0124.1	1				III
			CULG	0145.0	0450.0	2							IS
			LEAR				0302.8	0303.1	1				III
			LEAR				0341.6	0341.8	1				III
			CULG				0342.0		2				IIIB
			LEAR				0434.8	0437.5	1				III
			CULG	0450.0	0741.0	1							IN
			LEAR				0500.1	0500.5	1				III
			LEAR				0516.3	0516.5	1				III
			LEAR				0520.8	0521.0	1				III
			CULG				0521.0		2				IIIG
			LEAR				0616.3	0616.5	1				III
			LEAR				0751.3	0752.5	1				III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
08	0717	1555	WEIS				0751.4	0751.7	1				IIIB
			WEIS				0830.3	0831.6	2				IIIG
			LEAR				0830.8	0831.5	1				III
			WEIS				1216.0	1416.0	2				IN
	2046	2400	CULG	2057.5	2400.0	1	2048.5	2310.0	1				IS
			CULG				2141.0	2141.5	2				IIIB,U
			CULG				2303.0	2312.0	1				IIIB,V,N
			CULG	2303.0	2345.0	1							UNCLF
			CULG				2310.0	2400.0	1				IS,C
			LEAR				2310.1	2311.6	1				III
			LEAR				2312.0	0100.0	1				CONT
09	0000	0746	CULG	0000.0	0740.0	1	0000.0	0027.5	1				IS,C
			CULG				0037.0	0310.0	1				IN
			LEAR				0153.1	0153.1	1				III
			LEAR				0200.0	0807.5	1				CONT
			CULG				0310.0	0645.5	1				IS,C,DC
	0800	1550	BLEN										
			BLEN	0800.0	1550.0		0800.0E	1550.0D	3				I
	0754	1349	WEIS				0819.0	1555.0	2				IN
	1352	1555	WEIS										
			CULG	2205.0	2400.0	1	2331.0	2400.0	1				IS,DC
	2048	2400	CULG				2220.0		1				IIIB
10	0000	0746	CULG	0000.0	0307.0	1	0000.0	0134.0	1				IS,DC
			LEAR				0010.0	0000.0	1				CONT
			LEAR				0457.8	0500.3	1				III
			CULG				0458.5	0459.5	1				IIIG
			CULG	0641.0	0728.5	1							IS
			CULG				0700.5	0703.0	3	0701.0	0701.5	2	III,G,V
			LEAR				0700.6	0711.5	2				IIIG
			LEAR				0749.0	0800.3	1				G
	0716	1557	WEIS				0749.0	0749.4	2				IIIG
	0750	0820	BLEN				0750.0E	0820.0D	2				I
			WEIS				0756.4	0756.6	2				IIIG
			WEIS				0758.2	0759.0	2				IIIG
			WEIS				0811.0	1435.0	2				IN
			WEIS				0830.5	0830.6	1				IIIB
			LEAR				0927.8	0940.3	1				G
			WEIS				0927.8	0929.3	3				IIIG
			WEIS				1059.3	1100.9	3				IIIG
	1405	1518	BLEN				1405.0E	1518.0D	2				I
	2046	2400	CULG	2325.5	2326.5	1	2326.0	2326.5	1				IIIG
11			LEAR				0253.8	0255.0	1				III
	0000	0746	CULG				0343.0	0343.5	1				IIIG,U
			LEAR				0625.8	0626.0	1				III
			LEAR				0643.1	0643.3	1				III
	0745	1545	BLEN				0900.0	1545.0	1				I,N
	0715	1559	WEIS				1047.0	1135.0	1				IN
			WEIS				1203.5	1204.6	2				IIIG,U
			WEIS				1251.8	1251.9	1				IIIB
			BLEN				1303.0	1320.0	1				IV
			WEIS				1307.0	1348.0	1				II
			BLEN				1458.9	1459.2	2				III
			WEIS				1459.0	1459.3	2				IIIB
	2046	2400	CULG										
12	0000	0746	CULG										
	0612	0647	WEIS										
	0740	1540	BLEN	1230.5	1230.8	2							IIIG
			BLEN				1300.3	1301.0	1				IIIG
	0708	1600	WEIS				1334.7	1335.2	2				IIIG
			BLEN	1436.6	1437.2	3	1437.7	1439.0	2				IIIG
			WEIS	1436.7	1437.0	2							IIIG
			BLEN	1536.5	1536.9	1							DCIM
	2205	2400	CULG										
13	0000	0746	CULG										
	0710	1602	WEIS										
	0740	1545	BLEN										

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
13	2046	2400	CULG										
14	0000	0725	CULG										
	0709	1053	WEIS										
			LEAR				0809.0	0810.6	1				III
	0740	1550	BLEN				0910.0	0935.0	1				I
	1159	1604	WEIS										
	2046	2400	CULG										
15	0000	0746	CULG										
	0711	1605	WEIS										
	0737	1550	BLEN										
	2046	2400	CULG										
16	0000	0746	CULG										
	0706	1312	WEIS										
	0737	1220	BLEN										
	1318	1607	WEIS										
	2046	2400	CULG										
17	0000	0746	CULG										
	0703	1608	WEIS										
	2046	2400	CULG										
18	0000	0745	CULG										
	0702	1504	WEIS										
	1511	1611	WEIS										
	2046	2400	CULG										
19	0000	0730	CULG										
	0659	1615	WEIS										
	2047	2400	CULG										
20			LEAR				0220.0	0220.1	1				III
			LEAR				0318.6	0319.3	1				V
	0000	0745	CULG				0319.0		1				IIIB
	0655	1525	WEIS										
	2046	2400	CULG										
21			LEAR				0615.3	0621.6	1				III
	0000	0745	CULG				0615.5	0616.5	1				IIIG
			CULG				0622.5		2				IIIB
			CULG				0622.5	0625.5	1				IIIG,G
			LEAR				0622.6	0625.8	2				III
			LEAR				0956.6	0957.1	1				III
	0656	1616	WEIS				0956.7	0957.1	2				IIIG
	2046	2400	CULG										
22	0000	0745	CULG										
	0700	1617	WEIS										
	2045	2400	CULG										
23			LEAR				0303.8	0304.1	1				III
	0000	0745	CULG				0520.5		2				IIIG
	0654	0806	WEIS										
	0810	1618	WEIS										
	1343	1556	BLEN										
	2055	2400	CULG				2316.0	2328.0	3			II	
			LEAR				2317.8	2328.1	1			II	
24			LEAR				0253.3	0254.6	1				III
	0000	0745	CULG				0253.5	0254.5	2				IIIG,V
			CULG				0415.5		1				IIIB
			LEAR				0642.6	0644.1	1				III
			CULG				0643.0		2				IIIB
			CULG				0645.5	0646.0	1				IIIG
			CULG				0648.5	0701.5	3			II	
			LEAR				0649.8	0702.3	1			II	
	0732	1221	BLEN										
	0653	1621	WEIS				1003.2	1005.9	2				IIIG
			LEAR				1003.6	1005.6	1				V

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

FEBRUARY 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
24			WEIS				1134.0	1134.6	2				IIIB,U
			WEIS				1435.3	1440.0	2				IIIG
			SGMR				1437.1	1439.8	1				V
	2057	2400	CULG				2116.5	2154.0	1				IS
			CULG				2146.0	2146.5	2				IIIB,V
			CULG				2151.0	2152.5	2				IIIB,V
			CULG				2201.0		1				IIIB
25	0649	0925	WEIS										
	0000	0745	CULG				0654.5	0655.5	3				IIIB,V
			LEAR				0654.6	0656.3	1				V
			CULG				0704.5	0712.0	1			II	
			LEAR				0707.0	0714.1	1			II	
			CULG				0708.0	0708.5	1				IIIG
	0930	1311	WEIS				1231.8	1232.1	3				IIIB
	1401	1622	WEIS										
	2045	2400	CULG				2045.0	2055.5	3			II	
			SGMR				2045.3	2050.8	1				V
			CULG	2055.0	2211.0							IV	
			CULG				2109.5	2139.0	1			IV	
26	0000	0745	CULG				0052.0		1				IIIB
			CULG				0635.0	0636.5	1				IIIG
			LEAR				0635.3	0636.6	1				III
	0646	1624	WEIS										
	2241	2400	CULG										
27	0000	0744	CULG				0536.5		1				IIIB
	0645	1103	WEIS										
	1158	1626	WEIS				1324.3	1326.3	1				IIIG
			WEIS				1412.0	1626.0	2				IN
	2045	2400	CULG	2201.0	2202.0	1							IS
			LEAR				2357.3	2357.5	1				III
			CULG				2357.5		1				IIIB
28	0000	0744	CULG										
	0642	1627	WEIS				1241.5	1241.9	2				DCIM
	1521	1605	BLEN	1524.8	1527.2	3							IIIGG
			WEIS				1526.4	1526.9	2				DCIM
	2045	2400	CULG	2045.0	2400.0	1	2045.0	2400.0	1				IS,DC,C

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

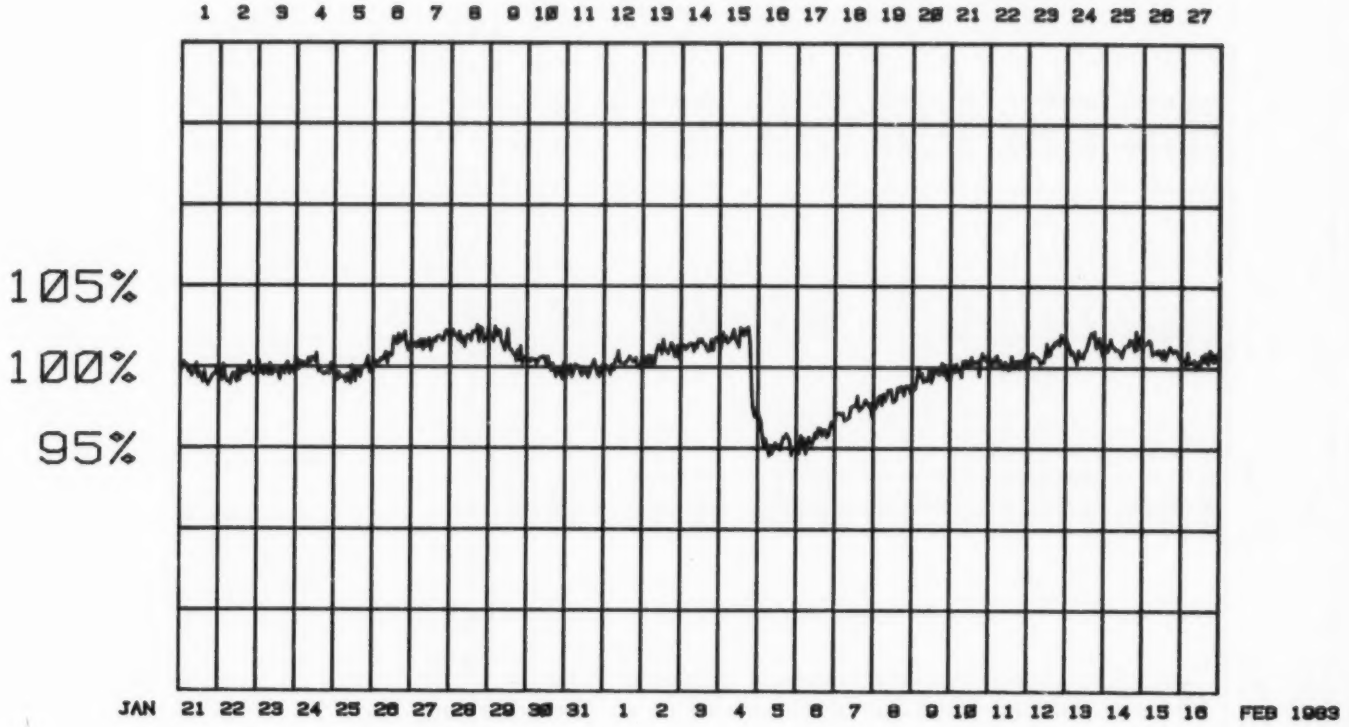
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

COSMIC RAY INDICES
(Neutron Monitor)
February 1983

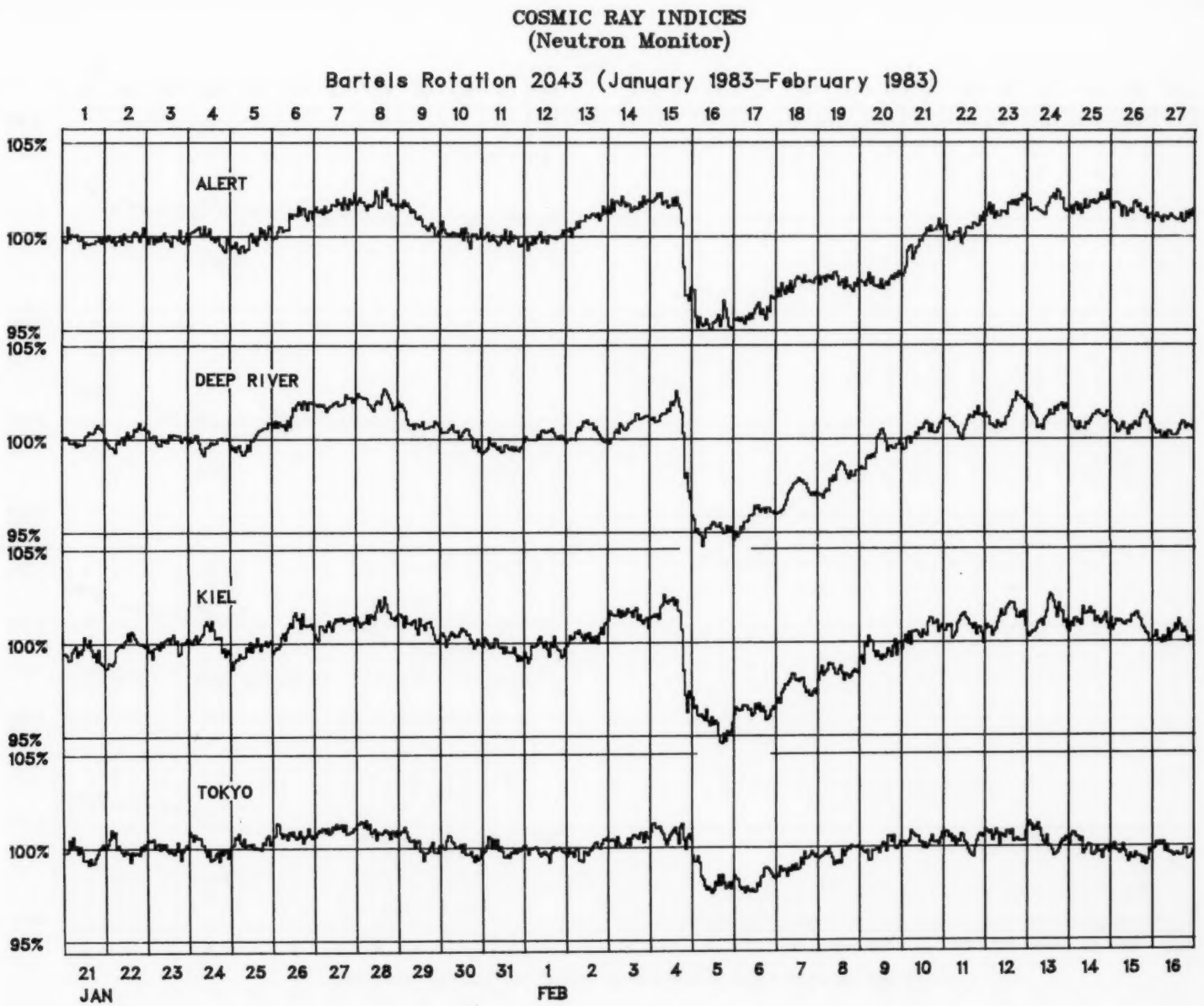
Feb 1983	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h/100	TOKYO Average (cts/h)/100
1	4007	6456.8	6131.8	5537.0	3524.1
2	4029	6520.9	6143.6	5575.1	3526.4
3	4052	6574.3	6165.7	5634.5	3545.2
4	4035	6519.0	6168.5	5601.7	3556.6
5	3810	6180.3	5827.2	5313.5	3469.5
6	3826	6201.4	5863.6	5351.7	3464.9
7	3892	6299.6	5941.8	5418.5	3497.4
8	3929	6311.3	5991.7	5464.8	3517.1
9	3976	6311.0	6086.1	5527.2	3528.5
10	4004	6445.7(23)	6141.1	5584.7	3541.7
11	4008	6488.9	6178.4	5598.9	3541.2
12	4038	6566.8	6205.5	5625.8	3550.4
13	4045	6575.7	6204.1	5624.0	3544.7
14	4050	6579.1	6185.3	5620.7	3530.0
15	4038	6560.5	6172.2	5605.7	3515.0
16	4017	6531.7	6147.6	5573.5	3520.6
17	4035	6551.8	6151.6	5591.7	3509.0
18	4069	6569.6	6198.0	5625.7	3540.1
19	4066	6679.8	6232.2	5656.1	3545.5
20	4065	6617.9	6236.5	5688.7	3543.5
21	4088	6658.7	6245.8	5700.1	3554.4
22	4080	6645.8	6258.1	5686.3	3555.1
23	4086	6648.3	6262.9	5689.6	3561.3
24	4112	6681.5	6301.8	5711.5	3562.7
25	4126	6700.6	6341.2	5745.1	3583.8
26	4141	6715.3	6357.1	5747.7	3583.4
27	4115	6690.1	6315.3	5734.4	3578.5
28	4106	6666.3	6286.7	5723.2	3576.7
MEAN	4030	6530.3	6169.4	5605.7	3538.1

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

THULE NEUTRON MONITOR



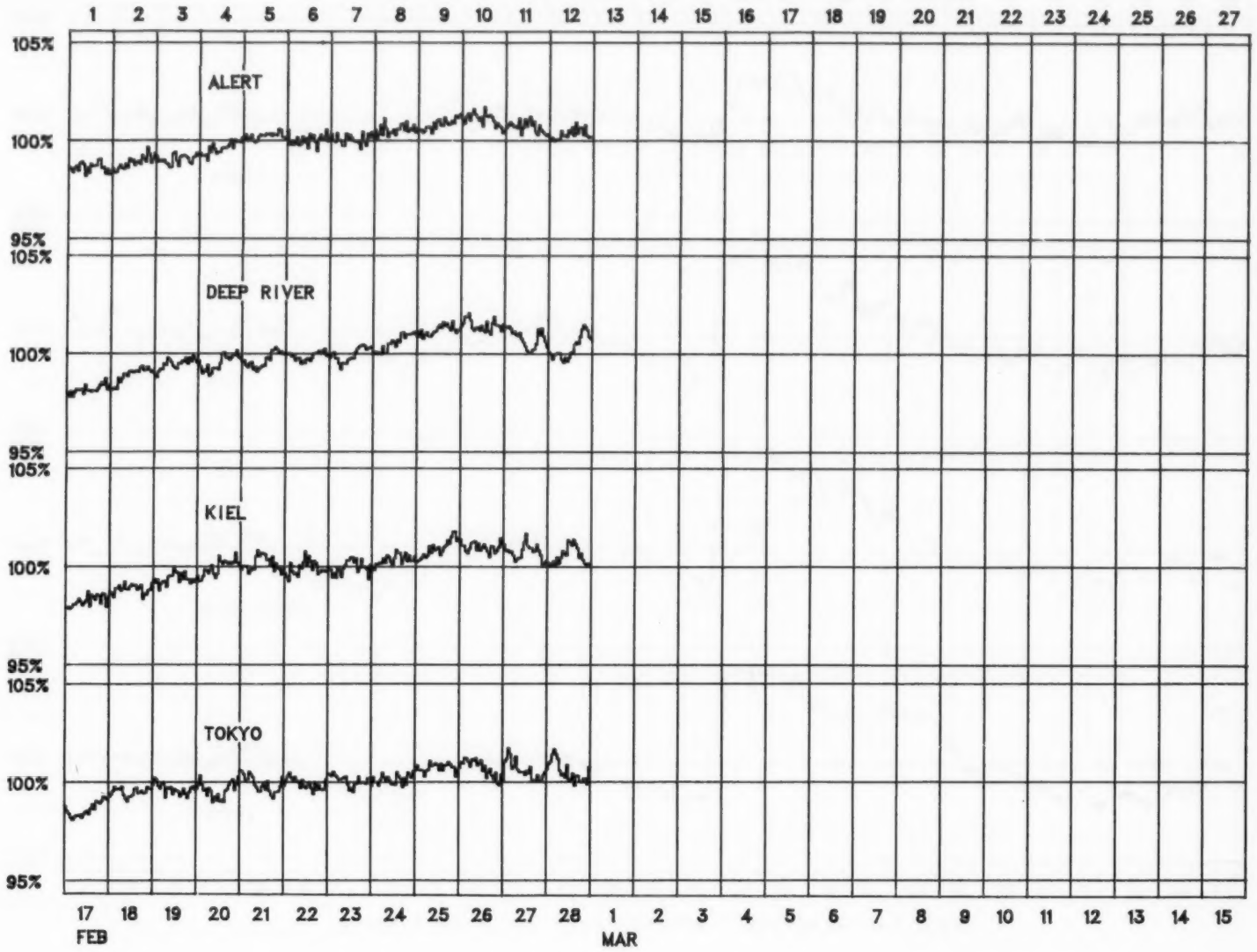
BARTELS ROTATION 2043


COSMIC RAY INDICES
(Neutron Monitor)
Bartels Rotation 2043 (January 1983–February 1983)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
105%
100%
95%
ALERT
DEEP RIVER
KIEL
TOKYO
21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
JAN
FEB

85
Feb 83

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2044 (February 1983–March 1983)



GEOMAGNETIC ACTIVITY INDICES

FEBRUARY 1983

Day	K_p Three-Hourly Indices 1	2	3	4	5	6	7	8	Sum	A_p	C_p	K_m Three-Hourly Indices 1	2	3	4	5	6	7	8	A_m	aa N	S	M	
1	Q8A 3-	3	3-	2+	3	3-	2+	1	20-	11	0.6	2	3-	2+	2+	3-	3-	3	1	20	20	17	14	24	
2	Q2K 0	1-	0+	1-	1-	3-	1+	3-	9	5	0.2	0+	1-	0+	1-	1-	3-	2-	2+	9	12	10	4	18	K
3	Q5A 2+	2+	2-	1	2	0+	2	3-	14+	7	0.4	2+	2+	2+	1-	20	1-	20	2+	14	16	12	16	13	
4	D5 2	2	2	2	2	8-	8-	6	31+	59	1.7	1+	2	2	2+	2-	7+	7	5	96	90	72	14	148	
5	D1 7+	8	7+	7+	7+	6	7	7-	57	143	2.0	6+	7	6	6+	6+	6-	6	6-	179	180	179	186	173	
6	D2 6+	6-	5	5	5+	5	2+	1+	36	47	1.5	6-	5-	4+	4	5-	5-	2-	1	64	57	51	63	45	
7	D3 3+	5-	5+	5+	5+	6	3	4	37	43	1.5	3	4-	5-	5	5+	6-	3-	4-	67	62	67	54	75	
8	5-	4+	4	3-	2+	2	1	3-	24-	18	1.0	4	4-	3+	2+	3-	1+	1	2	27	34	23	38	19	
9	3	3	2-	3-	4	3+	4	4-	25+	18	1.0	2-	2	1+	3-	4	3	4+	4-	31	40	26	17	50	
10	5+	5+	3	3+	2+	2+	3-	2	26+	23	1.1	4	4-	2+	4-	3	2+	3	2-	32	41	35	53	23	
11	1	1+	2	4	5-	3-	5+	5-	26-	24	1.1	1-	1	2+	4	5-	3-	5	4-	41	49	32	18	63	
12	4	3	4-	6-	6	4	3	2+	32-	33	1.3	3	2+	3+	5-	5	4-	3+	2+	46	48	39	48	39	
13	4+	4	5	5+	4+	3+	4	5-	35	35	1.4	4-	3+	4	5-	4+	3	4	4-	52	62	39	57	45	
14	4+	4-	5+	4-	3	4-	3-	5-	31	28	1.2	4	3+	4+	3	3-	3+	3-	4+	44	45	44	48	41	
15	3-	4-	4	4	5-	4+	4	3	30+	25	1.2	3-	3+	3+	3	4+	4	4-	3-	40	45	40	26	60	
16	4-	5+	4	4-	4	5-	4-	4-	33-	30	1.3	3+	4+	3+	4-	4-	4+	3+	3+	46	45	42	41	46	
17	3	3+	3-	3+	3	3+	4-	3-	25	16	0.9	3-	3-	2+	3	3+	3+	3+	3-	28	31	23	22	33	
18	Q9A 4-	3+	4-	3-	3	2	2+	2-	22+	14	0.8	3+	3-	3-	3-	3-	2+	2+	2-	22	24	17	21	21	
19	Q7A 1	3-	3+	2+	2+	2	1	3+	18	10	0.6	1-	3-	3	2+	3	2+	1	3+	21	19	23	19	23	
20	D4 4+	4	4	4-	5-	5	5+	6	37	41	1.5	4-	4-	3	3+	4	4+	5	5+	62	64	61	41	84	
21	4+	5	4	5-	4+	5-	4	5	36	36	1.4	4-	4+	3+	4-	4	4	4-	5-	52	57	52	48	62	
22	5+	3+	3	3	3-	2-	4-	4-	26+	21	1.1	4+	3-	3-	3-	2+	2-	4-	3	28	37	22	32	28	
23	4	4	2	2-	2-	4-	3+	4-	24	17	0.9	3	3+	2-	1+	2-	3+	3+	4-	27	35	23	24	34	
24	Q0A 3	3+	2	2+	3	4-	4-	2	23	14	0.8	2+	3-	2	2-	3	4-	4-	2-	25	38	29	27	41	
25	Q3 1-	2-	1	1+	1+	2+	2	1+	12-	6	0.2	1	1+	1	2-	2-	3-	2	1+	11	8	13	7	15	C
26	Q1 2	1-	1	1+	1-	1+	1+	1+	10-	5	0.2	2-	0+	1-	2-	1-	2-	1+	2-	9	13	7	8	13	CC
27	Q4A 1+	1-	1+	3	1+	1	3-	2+	14-	7	0.4	1	1	1+	3-	1+	1+	3-	2+	14	16	14	11	19	K
28	Q6A 1-	1+	1	2-	1+	2	3	3+	14+	8	0.4	1	1+	1+	1+	2	2+	3-	4-	17	17	18	10	25	
										27	.99									40.1	43.1	36.8	40.0	

Day	K_n Three-Hourly Indices 1	2	3	4	5	6	7	8	A_n	K_s Three-Hourly Indices 1	2	3	4	5	6	7	8	A_s
1	2	3-	2+	2+	3-	3	3	1	21	2-	2+	2+	2+	3-	2+	3-	1	17
2	0	0+	0	1-	1-	3-	2-	2+	8	1	1-	0+	1-	1-	3-	2-	3-	9
3	2+	2-	2-	1	2	1	2	3-	13	2	3-	3-	1-	2+	C+	2+	2+	15
4	1+	2-	2+	2+	2	8-	7	5	92	1+	2+	2	2+	2-	7	7+	5	93
5	6	7	6	7-	6+	5+	6	6-	172	6+	7	6	6+	7-	6	6	6-	186
6	5+	5-	4+	4	5	5-	2	1+	65	6-	4+	5-	4+	5-	5-	2-	1	63
7	3	4-	5-	5	5	6-	3	4-	67	3	3+	5-	5	5+	5+	2+	3+	66
8	4	4-	3+	2+	3-	2-	1	2+	27	4+	3+	3+	3-	2+	1+	1	2	26
9	2	2	1	3-	4+	3	4	4-	31	1+	2	1+	3-	4	3-	4+	4-	31
10	4+	4	3-	4	3+	2+	3	2	36	4-	4-	2	3+	3-	2+	3	2-	28
11	1-	1+	2	4	5-	3-	5	4	41	1-	1-	2+	4	4+	3-	5	4-	40
12	3	2+	4-	5	5	4-	3+	2	48	3	3-	3	5-	5+	3+	3	3-	44
13	4-	3+	4+	5-	5-	3+	4	4-	56	4-	3+	4-	4+	4	3	4	4-	48
14	4-	4-	5-	3	3	3+	2+	4+	44	4+	3+	4	3	3-	4-	3+	5-	44
15	3-	3+	3+	3	4	4	4	3	40	3-	3+	4-	3	5-	4	3+	3-	41
16	3	5-	3+	3+	4-	4+	3+	3+	46	4-	4	3+	4-	4-	4+	3	3+	45
17	2+	3	2+	3-	4-	4-	3+	3-	30	3-	3-	2+	3	3-	3+	3	2+	25
18	3+	3-	3	3-	3-	3-	2+	2-	24	3	2+	3-	2+	2+	2-	2+	2-	20
19	1-	2+	3	3-	3	2+	1	3+	21	1-	3	3-	2	3	2+	1+	3+	21
20	4-	4-	3+	3+	4	5-	5-	5	57	4-	4-	3	4-	4+	4+	5+	6-	67
21	3+	4+	3	4	4	4+	4-	4+	53	4-	4	3+	4-	4-	4	4-	5-	51
22	5-	3-	3-	3-	2	2-	4-	3	30	4	3-	3-	2+	2+	1+	4-	3	27
23	3	3+	2	1	2-	3+	3+	4-	28	3	3	1+	1+	2-	3+	3+	4-	27
24	2+	3-	2-	2-	3	4-	3+	2	25	2	2+	2	2	3	4-	4-	2-	24
25	1-	1+	1	2-	2-	3-	2-	1+	11	1	1+	1-	2-	2-	3-	2	1+	11
26	2-	0	0+	1+	1-	2	2-	2-	8	1+	0+	1	2-	0+	1+	1+	2	8
27	1-	1	1+	3	2-	2-	3-	2+	14	1+	1-	1+	3-	1+	1+	3-	2+	13
28	1-	1-	1	1+	2	3-	3	3+	16	1+	2-	1+	1+	2-	2	3-	4-	17
Mean									40.4									39.5

NOTE: All aa indices are provisional from 1 January 1981 until further notice, because of the change in the Southern Hemisphere observatory.

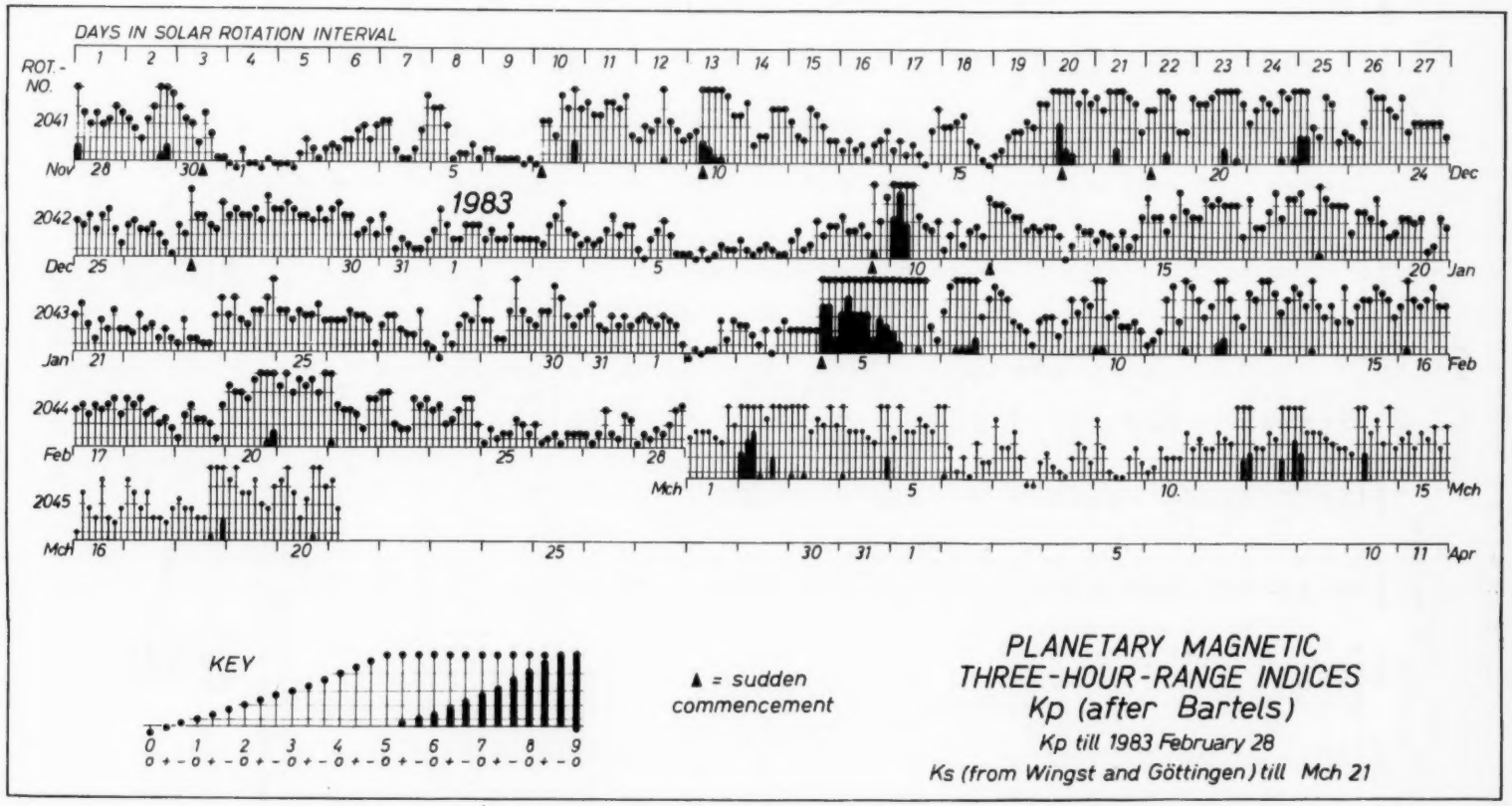
The Geophysikalisches Institut, University of Goettingen, prepares the quiet (Q) and disturbed (D) days, geomagnetic planetary 3-hour-range indices (Kp), magnetic character figures (Cp) and average amplitude (Ap). The 10 most quiet days [Q1-Q0(10)] and the five most disturbed days (D1-D5) are ordered from most quiet and from most disturbed, respectively. A or K means "not really quiet" (A implies Ap>6 and K implies Ap<6 with either one Kp>30 or two Kp values >3-). An asterisk means "not really disturbed" (Ap<20).

Geomagnetic 3-hour indices Km, Kn, Ks and daily mean values Am, An, As and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices, daily north (N) and south (S) values and half-daily antipodal mean (M) values are given. C indicates really quiet 24- and 48-hour intervals centered on 1200 UT; K indicates similar periods with some slightly disturbed 3-hour intervals.

DAILY AVERAGE INDICES A_p

DAY	1982 MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1983 JAN	FEB
1	68	20	22	20	18	12	9	28	36	2	11	11
2	107	42	30	18	10	55	12	24	32	4	7	5
3	13	48	45	9	6	26	21	10	21	9	11	7
4	12	22	19	7	2	15	32	10	8	13	9	59
5	16	21	14	6	4	18	39	9	9	11	6	143
6	3	18	6	14	15	25	199	19	11	3	3	47
7	3	5	4	14	21	107	88	35	4	29	4	43
8	11	12	5	9	15	6	12	21	12	27	9	18
9	20	10	8	16	10	23	50	6	8	18	20	18
10	16	61	5	51	10	27	10	15	11	46	78	23
11	10	47	9	32	36	28	13	14	20	20	11	24
12	8	15	6	59	48	22	14	15	16	14	18	33
13	13	11	6	62	144	10	15	34	18	6	8	35
14	11	6	8	24	153	7	14	30	12	8	8	28
15	7	10	20	26	36	3	12	8	13	11	22	25
16	4	11	10	10	50	6	12	14	9	13	25	30
17	14	19	12	6	24	16	11	21	6	62	25	16
18	20	12	20	7	24	16	30	23	12	41	32	14
19	10	8	12	24	28	10	28	17	10	34	17	10
20	12	20	8	18	24	12	24	14	6	46	14	41
21	23	32	8	9	11	15	76	11	25	37	12	36
22	38	18	4	20	16	24	135	8	30	42	8	21
23	8	9	2	20	12	17	26	5	36	26	10	17
24	12	15	4	21	50	18	22	5	83	19	22	14
25	20	52	8	17	22	20	13	15	54	14	16	6
26	11	7	24	16	27	20	84	30	26	9	12	5
27	9	24	54	32	27	11	42	16	17	18	10	7
28	6	21	56	27	21	12	14	10	28	21	10	8
29	13	31	35	19	22	38	9	35	32	20	16	
30	15	30	35	39	23	28	12	27	13	15	19	
31	20		31		25	16		34		7	13	
MEAN	18	22	17	22	30	21	36	18	21	21	16	27

GEOMAGNETIC ACTIVITY INDICES



PRINCIPAL MAGNETIC STORMS

FEBRUARY 1983

Sta	Geomag Lat	Commencement Time Day	(UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
COL	64.6N	04	1614	SC*	- 92	-566	-189	04(6,7)	9	468	3250	2620	08	15
SIT	60.0N	04	1615	SC*	- 49 *	179 *	36 *	05(5)	8	250	—	990	08	12
WIT	54.2N	04	1614	SC*	23 *	215 *	13 *	04(6)	8	76	460	350	07	18
FRD	49.6N	04	1614	SC*	6	140	- 8	04(6,7) 05(2)	7	55	315	250	--	--
IRK	41.0N	04	1615	SC	2.9	4	32	04(6)	8	49	362	186	07	18
HON	21.1N	04	1615	SC	3	45	26	04(6)	7	17	316	40	06	18
JAI	17.3N	04	1615	SC	- 1.3	106	- 29			13	351	60	06	20
SHL	14.7N	04	1615	SC	.7	115	21			9	—	40	06	20
UJJ	13.5N	04	1615	SC	- 1.4	122	- 24			11	385	60	06	20
ABG	09.5N	04	1615	SC	- 1.7	104	- 14	04(6)	8	11	357	64	06	20
HYB	07.6N	04	1614	SC	- 1.1	108	- 10	04(6,7)	8	8	381	37	06	18
GUA	04.0N	04	1614	SC	1	96	- 30	04(5)	8	10	350	60	06	19
TRD	01.1S	04	1615	SC	.3	111	141			—	—	—	06	20
PMG	18.6S	04	1614	SC*	2.2	114	95	04(6)	8	11	340	180	07	20
HER	33.7S	04	1615	SC	11	92	- 80	04(7)	8	50	304	389	06	18
GNA	43.2S	04	1615	SC	12	(70.)	65	04(6,7)	7	52	320	(300	06	18
CNB	43.9S	04	1614	SC*	10.2	132	22	04(6) 05(4,5)	7	46	374	170	07	18
KGL	56.5S	04	1614	SC	33	170	60	04(6,7)	9	150	2040	550	06	18
KGL	56.5S	07	0000	..	..	..	..	07(5,6)	7	86	610	160	08	12
HYB	07.6N	07	0200	..	..	..	..	07(4,5,6)	5	4	137	26	08	10
WIT	54.2N	09	1400	..	..	..	..	09(7)	6	21	160	50	10	06
HYB	07.6N	09	0900	..	..	..	..	09(7)	5	2	83	15	10	23
HER	33.7S	09	19--	..	..	..	..	09(7)	5	12	58	52	10	04
COL	64.6N	11	09--	..	..	..	..	12(4)	8	415	1940	1150	18	18
WIT	54.2N	11	1000	..	..	..	..	11(7)	6	40	200	75	14	01
FRD	49.6N	11	11--	..	..	..	..	12(4)	6	29	100	57	18	—
IRK	41.0N	11	0800	..	..	..	..	13(4)	6	25	147	43	16	22
HYB	07.6N	11	0700	..	..	..	..	11(4) 12(4,5)	6	5	221	25	14	01
GUA	04.0N	11	0832	..	..	..	..	11(4)	5	--	180	30	12	17
HER	33.7S	11	19--	..	..	..	..	11(7)	5	37	100	94	12	17
HYB	07.6N	14	0500	..	..	..	..	14(3) 15(5,6,7) 16(6)	5	3	121	15	16	23
KGL	56.5S	16	0311	SC	5	10	5	16(5,6)	5	26	130	40	17	06
COL	64.6N	19	0438	SC*	- 2	+ 81	- 6	21(6)	7	212	1620	930	22	16
WIT	54.2N	19	2340	..	..	..	..	20(6,8) 21(8)	6	39	200	65	22	03
FRD	49.6N	19	0438	SC	- 1	16	- 2	20(8) 21(2) 22(1)	5	28	119	69	24	21
HYB	07.6N	19	0438	SC	- .2	18	- 2	20(6,7)	5	5	126	37	22	03
CNB	43.9S	19	23--	..	..	..	..	20(5,8) 21(5)	5	19	133	46	22	03
KGL	56.5S	19	2300	..	..	..	..	20(7,8)	8	128	615	520	21	12
HER	33.7S	20	11--	..	..	..	..	20(5,7,8)	5	29	60	125	21	01
HER	33.7S	21	20--	..	..	..	..	21(8)	5	15	61	91	22	01
HON	21.1N	28	2145	SC	—	14	3	02(3,4)	6	9	309	48	03	12
HYB	07.6N	28	1800	..	..	..	..	02(5)	7	6	301	24	03	20
GUA	04.0N	28	2146	..	..	..	..	01(1)	5	—	130	30	01	10
FRD	49.6N	29	19--	..	..	..	..	02(1,2) 03(1)	6	35	200	228	06	03

Reports were received from the following observatories:

ALIBAG	HERMANUS	PORT MORESBY
CANBERRA	HONOLULU	SHILLONG
COLLEGE	HYDERABAD	SITKA
FREDERICKSBURG	IRKUTSK	TRIVANDRUM
GNANGARA	JAIPUR	UJJAIN
GUAM	KERGUELEN	WITTEVEEN

RADIO PROPAGATION QUALITY INDICES

February 1983

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	6.8	6.7	8.0	6.0	5.3
2	7.0	7.4	5.5	6.1	5.4
3	5.9	9.0	4.3	6.5	6.7
4	6.0	3.8	9.4	7.2	6.4
5	2.9	0.0	4.5	2.2	3.8
6	3.4	3.0	8.0	5.6	5.6
7	4.4	3.0	5.8	5.0	5.2
8	4.5	3.4	7.6	6.0	4.2
9	5.7	4.4	4.4	5.0	4.3
10	4.2	3.8	5.0	3.3	3.3
11	5.5	5.5	5.0	5.2	5.0
12	4.5	4.2	4.5	4.7	4.8
13	5.2	3.3	6.5	5.1	5.2
14	4.5	3.3	6.7	3.6	3.9
15	4.2	3.4	6.7	4.8	4.0
16	5.2	4.8	2.8	5.2	4.7
17	4.4	4.9	4.0	4.9	4.1
18	3.3	4.6	6.5	4.8	4.5
19	6.3	6.0	4.5	6.5	6.6
20	7.0	5.1	9.1	6.7	5.6
21	6.0	5.0	8.6	6.3	7.2
22	5.6	5.4	5.8	3.3	5.0
23	6.7	6.7	9.1	5.1	5.4
24	5.7	5.7	8.9	5.6	4.7
25	6.0	8.1	5.8	6.5	5.8
26	7.4	8.7	5.8	7.3	7.7
27	8.0	9.7	5.3	7.4	6.8
28	8.5	9.5	5.0	8.2	8.1
MEAN	5.5	5.3	6.2	5.5	5.3

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

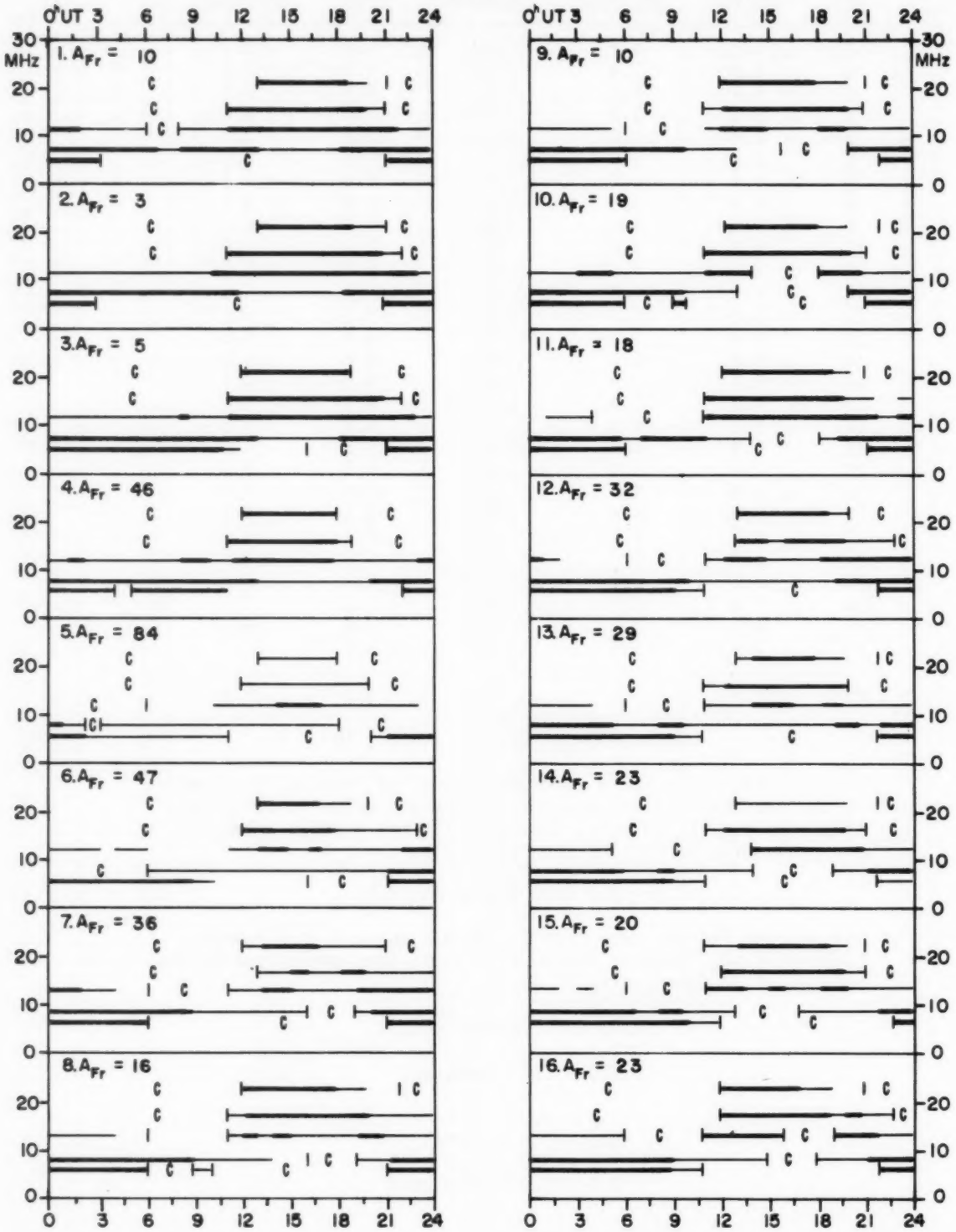
The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

Scale for Quality Indices

0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

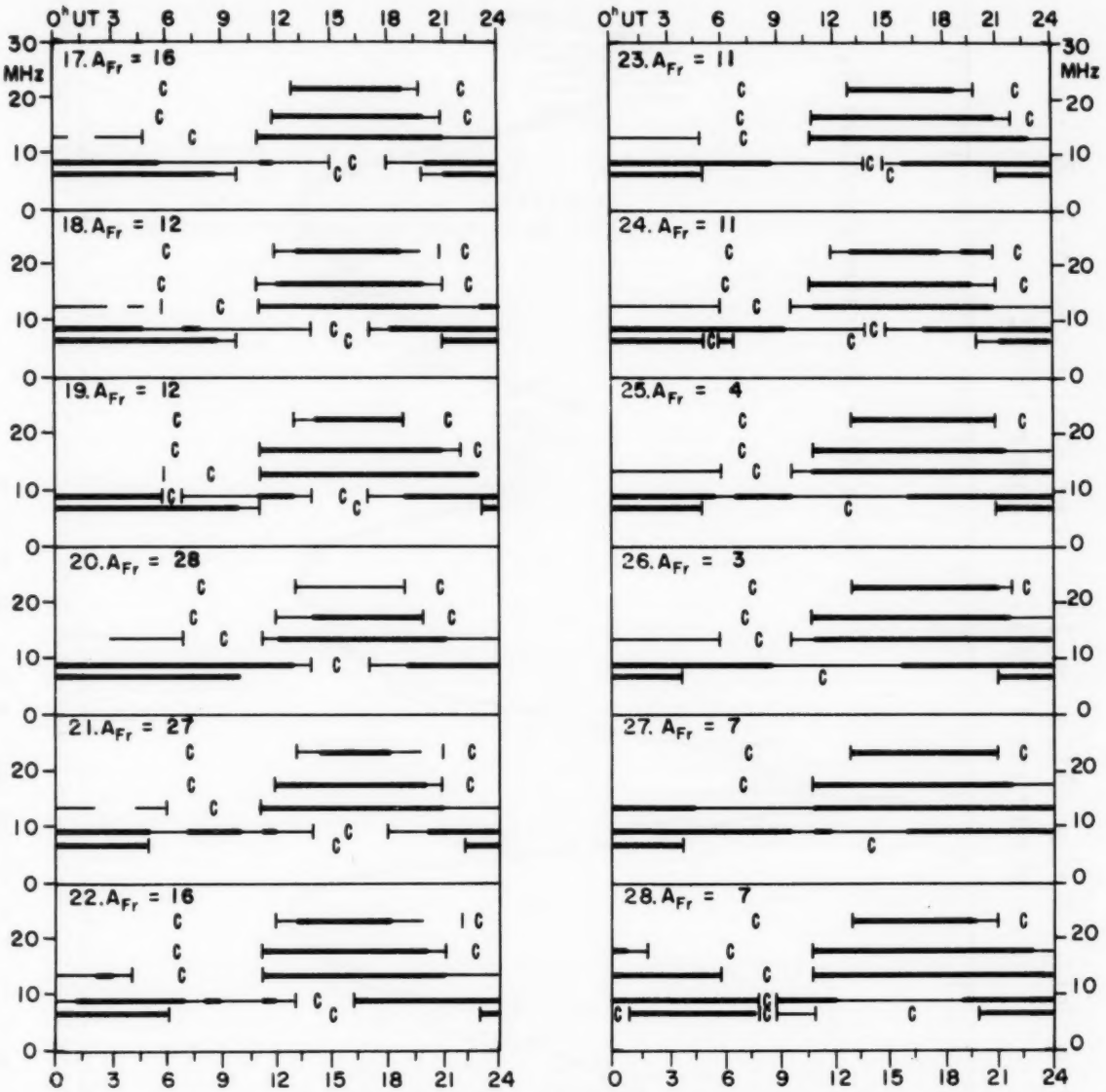
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

FEBRUARY 1983



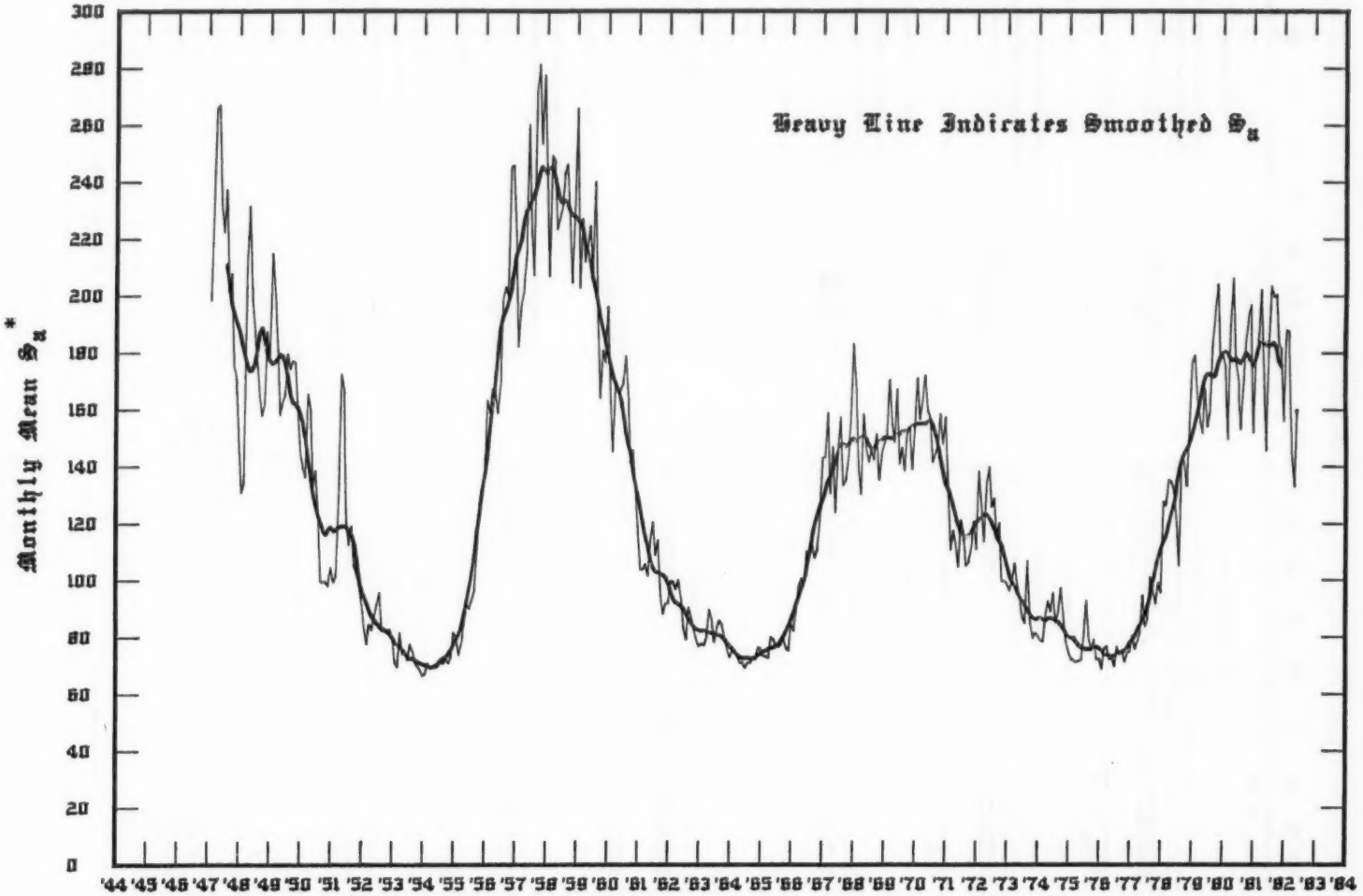
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

FEBRUARY 1983



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Norddeich-New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -12 dB above 1 μV/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μV/m and -40 dB above 1 μV/m are represented by the fine line.

Monthly Mean Ottawa 10.7 cm Solar Radio Flux
February 1947 – June 1982



* Solar Flux Units (10^{-22} W/m^2 Hz) Adjusted to 1 A.U., Series D.

SGD 464 Part I (Prompt)

LATE DATA

Contents

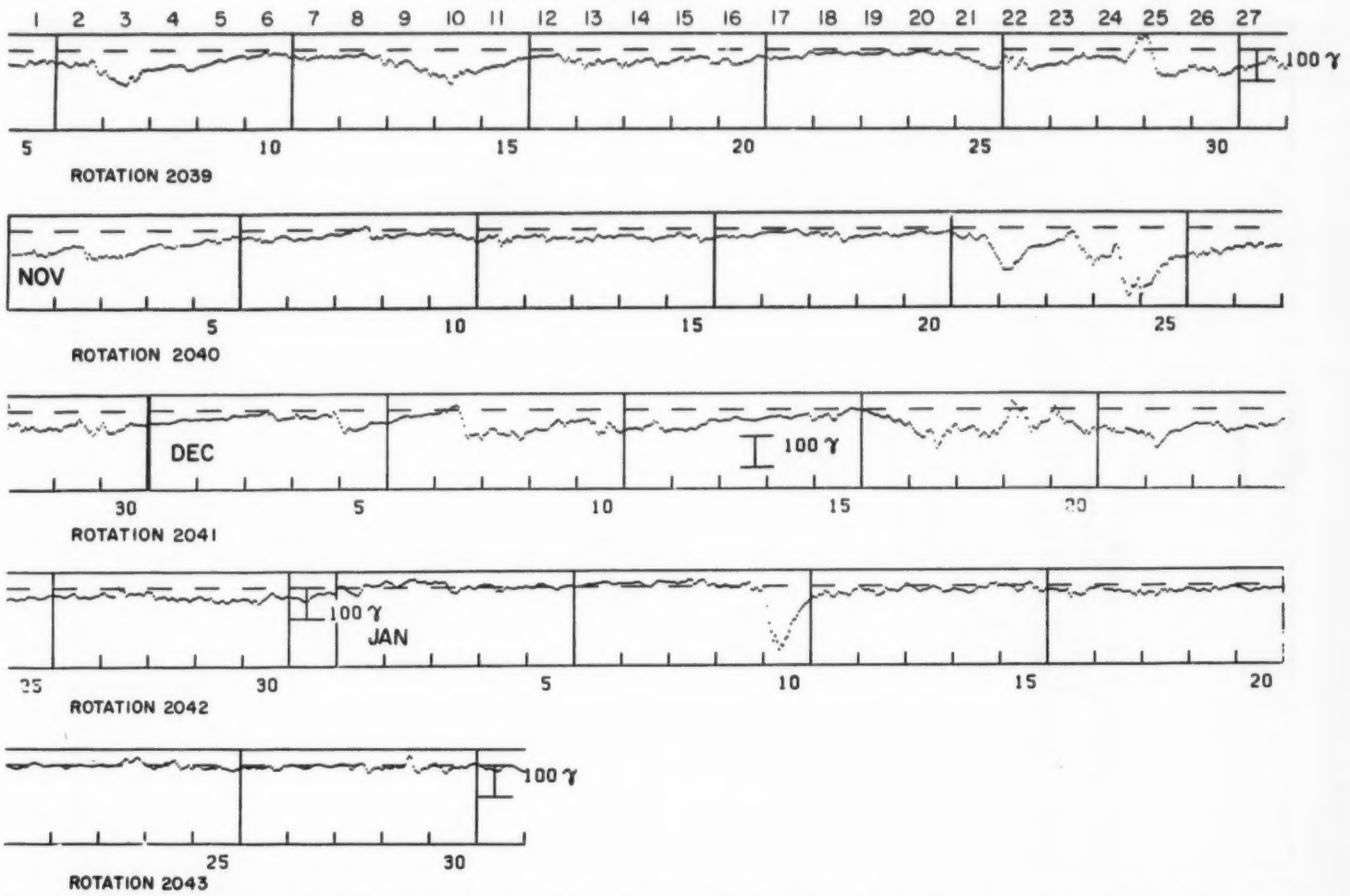
	Page
Geomagnetic Indices January 1983	
Chart of Dst by Bartels Rotation	96
Hourly Equatorial Dst Values (Provisional)	97
Sudden Commencements and Solar Flare Effects	98

* Solar Flux Units (10^{-22} W/m^2 Hz) Adjusted to 1 A.U., Series D.

GEOMAGNETIC ACTIVITY INDICES

Hourly Equatorial Dst

by Bartels Rotation



Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

to month.

HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

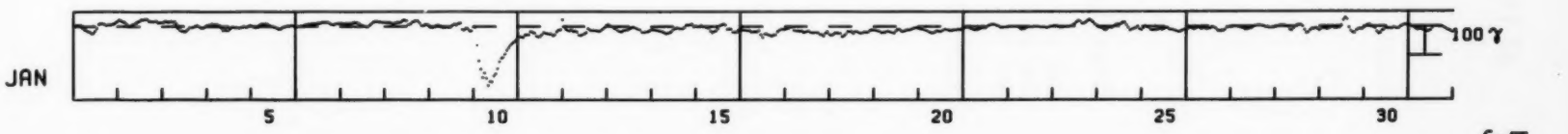
NASA/GODDARD SPACE FLIGHT CENTER

JANUARY 1983

(Time-UT)

(Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	3	4	4	3	-6	-11	-14	-18	-20	-26	-24	-16	-6	7	9	8	6	3	3	4	6	7	12	16
2	22	19	15	13	6	0	1	6	7	12	16	19	24	23	25	24	17	16	16	16	18	11	13	12
3	14	13	14	13	16	14	15	6	-7	-14	-17	-19	-18	-11	-3	-5	-3	0	3	-1	-5	-6	-2	3
4	4	5	8	5	6	5	2	-5	-14	-10	-14	-13	-6	-1	-3	-5	-5	-6	-4	-1	-2	-4	1	2
5	-1	-4	-4	-2	4	8	7	8	6	2	-1	-1	-3	-6	-9	-8	-3	-1	1	2	2	3	2	0
6	-1	0	1	1	4	6	7	7	8	8	9	11	10	13	14	13	13	11	6	5	6	9	10	10
7	9	8	10	10	9	10	13	12	12	9	4	2	0	-1	-2	4	9	15	17	16	15	14	13	13
8	12	12	12	10	6	11	13	13	15	21	21	19	6	8	15	18	20	19	11	2	3	6	7	4
9	-3	-4	-1	3	5	1	-3	-4	-2	-1	-4	-2	4	7	4	9	11	-11	-13	-6	-8	-16	-15	-1
10	-3	-65	-118	-146	-174	-158	-177	-201	-187	-189	-168	-161	-144	-120	-108	-106	-94	-81	-73	-65	-58	-53	-46	-35
11	-35	-37	-38	-29	-29	-28	-16	-20	-23	-33	-36	-35	-28	-20	-24	-25	-27	-26	-32	-28	-18	-12	-11	-23
12	-3	-13	-14	-16	-11	-18	-16	-20	-31	-32	-29	-26	-21	-7	-13	-15	-14	-15	-16	-19	-14	-9	-3	4
13	6	1	-1	-6	-9	-15	-18	-19	-14	-12	-12	-8	-5	-2	-4	-7	-10	-12	-20	-21	-18	-19	-15	-11
14	-9	-12	-13	-15	-16	-18	-21	-25	-23	-22	-17	-10	-7	-4	-7	-8	-8	-3	0	4	5	8	-2	2
15	-1	-1	3	-1	-2	-4	-7	-16	-22	-17	-15	-7	3	5	9	4	-10	-8	-9	-20	-20	-21	-13	-13
16	-12	-12	-13	-15	-14	-20	-19	-18	-18	-14	-29	-39	-26	-25	-30	-31	-34	-29	-29	-18	-13	-9	-11	-9
17	-6	-6	-1	-3	-14	-16	-14	-17	-15	-20	-20	-17	-16	-22	-22	-22	-21	-22	-29	-29	-34	-24	-18	-27
18	-32	-29	-23	-22	-24	-24	-36	-32	-26	-17	-19	-17	-25	-17	-18	-22	-24	-22	-19	-21	-19	-14	-11	-11
19	-14	-15	-17	-22	-21	-21	-17	-17	-20	-22	-24	-15	-9	-11	-18	-17	-14	-11	-13	-10	-7	-5	-5	-5
20	-9	-9	-11	-14	-17	-20	-23	-23	-19	-15	-18	-18	-14	-10	-11	-12	-15	-14	-11	-12	-11	-12	-10	-6
21	-2	-4	-5	-7	-9	-12	-11	-10	-7	-4	-6	-5	1	4	6	7	5	2	1	-4	-4	-2	-3	-1
22	0	-1	0	0	0	-4	-10	-9	-8	-3	0	-2	-2	0	1	-1	-2	-3	-2	-2	-5	-2	0	0
23	2	3	0	-4	-3	-1	+1	-2	0	2	4	8	15	20	17	9	9	14	20	24	19	14	6	3
24	-3	-4	-6	-12	-12	-6	-2	-5	-1	5	7	5	8	13	14	4	-5	-14	-9	-7	-5	1	-9	-12
25	-5	1	-2	-5	-12	-13	-13	-12	-10	-7	-12	-8	-4	-5	-11	-11	-13	-15	-18	-19	-17	-13	-12	-9
26	-7	-4	-6	-10	-7	-3	-3	-9	-6	-7	-10	-7	-6	-2	-4	-8	-16	-15	-15	-15	-10	-2	-3	-3
27	-1	1	0	-2	-4	-5	-7	-11	-10	-7	-8	-3	1	2	2	3	1	0	-3	-3	-5	-5	-4	-2
28	-1	1	3	3	2	0	-2	-12	-15	-6	0	3	5	4	-1	-13	-24	-22	-14	-8	-10	-6	-10	-15
29	-8	-5	-8	-10	-8	-4	0	-6	-7	-5	-4	3	21	29	23	-5	-17	-22	-24	-14	-9	-9	-11	-5
30	0	4	5	-2	-3	-7	-19	-26	-23	-15	-11	-6	-8	-7	-9	-4	-6	-8	-6	0	2	5	5	1
31	2	-2	-5	-3	-13	-9	-10	-14	-18	-17	-19	-14	-6	0	1	-2	-2	-1	-5	-8	-13	-15	-19	-21



97
Late
Jan 83

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

JANUARY 1983

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)

09	15	45	A: SOD DOB NUR WNG WIT NGK DOU CLF MMB EBR COI TOL FRD PEN ALM KAK HTY KNY LNP HUA MPO AMS KGL DUM; B: BDV AQU GNA CZT
11	23	09	A: PEN ALM HUA MPO; B: WNG WIT DOU CLF LNP GNA AMS CZT DUM; C: NGK HAD BDV (si: B: EBR)

Reporting Observatories (28-II):

SOD NUR DOB WNG WIT NGK HAD BDV DOU CLF MMB AQU EBR COI TOL FRD PEN ALM KAK HTY KNY LNP HUA TAN MPO GNA AMS CZT KGL DUM

☆U.S GOVERNMENT PRINTING OFFICE:1983—676-019 / 13

Solar Flare Effects (sfe)

1	09 43	-	10 02	MPO
5	00 27	-	00 36	LNP
7	02 05	-	02 18	KAK HTY LNP
11	03 02	-	03 06	LNP
12	12 50	-	.. ..	TAN
13	06 31	-	06 45	MPO
15	01 51	-	01 54	LNP
22	15 20	-	15 27	HUA
24	10 00	-	.. ..	TAN
25	09 45	-	10 02	ALM
27	03 35	-	03 58	HTY
27	04 00	-	.. ..	TAN
28	12 18	-	12 50	ALM MPO
30	04 39	-	04 42	LNP